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U.S. Department of the Interior

Bureau of Land Management
Rock Springs Field Office
Kemmerer Field Office

September 2003

Finding of No Significant Impact Decision Record and Environmental Assessment for Rendezvous Phase IV Pipeline Project, Sublette and Sweetwater Counties, Wyoming

2004-010824/NF

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MISSION STATEMENT

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

WY-090-EA03-060

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Rock Springs Field Office
280 Highway 191 North
Rock Springs, Wyoming 82901-3447

WY-090-EA03-060
MGR Rendezvous Phase IV
Natural Gas Pipeline

September 3, 2003

Dear Reader:

This Environmental Assessment, Decision Record and Finding of No Significant Impacts (FONSI) for the proposed Mountain Gas Resources, Inc. Rendezvous Phase IV Natural Gas Pipeline Project are furnished for your information. The decision on this project was based upon the analysis in the Environmental Assessment, public concerns and comments, and other multiple-use resource objectives or programs that apply to the project.

If you have any questions or concerns about this decision, please contact Kelly Lamborn at (307) 828-4505 or send your comments to:

Kelly Lamborn
NEPA Project Lead
Bureau of Land Management
312 Highway 189 North
Kemmerer, WY 83101

Sincerely,

Acting Field Manager

3 Attachments:
- 1-FONSI
- 2-Decision Record
- 3-Environmental Assessment

FINDING OF NO SIGNIFICANT IMPACT
MOUNTAIN GAS RESOURCES, INC.
RENDEZVOUS PHASE IV
NATURAL GAS PIPELINE PROJECT

Based on my review of the analysis of the Rendezvous Phase IV Natural Gas Pipeline Project Environmental Assessment (EA) (September 2003), I have determined that the proposed action is in conformance with the approved land use plans and will not have any significant impacts on the human environment. Therefore, an environmental impact statement is not required. Further explanation of the finding is provided below.

The EA shows that adverse impacts to surface ownership/use and grazing; livestock management; socioeconomics/environmental justice; cultural resources; paleontology; soils/watersheds; water resources; air quality/noise; vegetation/riparian areas; wildlife and fisheries; threatened, endangered, candidate and special status species; visual resources; and from the use of hazardous materials would all be minor, short term, necessary and due impacts. Potentially substantial positive economic impacts could result for the companies, and local, state and federal governments.

The Kemmerer Resource Management Plan and the Green River Resource Area Management Plan provide for the use of these lands for oil and natural gas development. The Proposed Action would be in conformance with these land use plans, and amendments to the plans would not be necessary to implement the Proposed Action.

Approval:

9-4-03

Acting Field Manager, Rock Springs Field Office

Date

DECISION RECORD

FOR

MOUNTAIN GAS RESOURCES, INC

RENDEZVOUS PHASE IV
NATURAL GAS PIPELINE PROJECT

SUBLETTE AND SWEETWATER
COUNTIES, WYOMING

WYW156822

EA NUMBER WY-090-EA03-060

SUMMARY OF THE DEVELOPMENT PROPOSAL

Mountain Gas Resources, Inc. (MGR) is proposing to construct approximately 37.6 miles (23.8 miles on Federal lands) of 20-inch natural gas pipeline from MGR's Granger Plant in the SE¼ of section 16, T18N, R111W, Sweetwater County, Wyoming to MGR's Fontenelle Compressor Station in the W½SE¼ of section 14, T24N, R111W, Sweetwater County, Wyoming; and approximately 17.9 miles (all on Federal lands) of 16-inch pipeline from the Fontenelle Compressor Station to the Bird Canyon Compressor Station in the NE¼NE¼ of section 34, T27N, R111W, Sublette County, Wyoming; and related facilities (including valves, pigging equipment, side taps, and metering equipment) to transport natural gas produced from the Jonah, Moxa Arch, and Fontenelle fields for delivery to multiple markets.

The total length of the pipeline is approximately 55.5 miles, 41.7 miles of which are on Federal lands managed by both the Bureau of Land Management (BLM) and the Bureau of Reclamation (BOR). MGR is requesting a 70 foot wide corridor for construction, which will be reduced to a permanent right-of-way width of 50 feet. Additional space beyond the 70-foot width will be necessary for 52 staging areas where the pipeline would cross a road, railroad, or river. The proposed pipeline will parallel existing pipelines through the entire route. MGR's Proposed Action incorporated several measures to reduce or avoid impacts to the environment.

DECISION

It is the decision of the Acting Field Manager, Rock Springs Field Office to approve MGR's proposed project as described under the proposed action. Approval allows the authorization of necessary permits and rights-of-way on public lands administered by the BLM to MGR to implement this project.

Approval is conditioned upon and subject to the following requirements:

- MGR will implement the operator committed resource protection measures described in Section 2.3 of the Environmental Assessment.
- Direct impacts to the Sublette Cutoff, the East Bank Kinney Cutoff, and the Slate Creek Cutoff are prohibited. The areas where these sites are crossed by the project will be fenced so as to prohibit construction damages to the trail ruts. All fences will extend a minimum of 50 feet each side of the trail center point for a total of 100 feet. The position of the fence will be determined by a permitted archaeologist.
- All surface disturbing activity within 200 feet of the Sublette Cutoff, the East Bank Kinney Cutoff and the Slate Creek Cutoff will be monitored by an archaeologist who meets or exceeds the qualification standards recommended by the Secretary of the Interior.
- Construction and reclamation activities on or within a mile of the Green River will be completed prior to November 26 for the protection of winter habitat for bald eagles.
- Monitoring inspections conducted by BLM and MGR will be based upon these requirements which will be applied to all surface disturbing activities. BLM will conduct monitoring inspections of construction and rehabilitation operations through a compliance officer and/or inter-disciplinary team to ensure that these measures are effectively implemented.

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ALTERNATIVES CONSIDERED INCLUDING THE PROPOSED ACTION

Two alternatives (proposed action and no action) were considered and analyzed in detail.

Proposed Action - The proposed development would involve constructing a 16 and 20-inch natural gas pipeline, beginning at MGR's Granger Plant located in section 16, T18N, R111W, Sweetwater County, Wyoming and terminating at the Bird Canyon Compressor Station located in section 34, T27N, R111W, Sublette County, Wyoming, for a total of 55.5 miles, 41.7 miles on Federal land.

No action – The no action alternative was analyzed in detail. Under the no action alternative, the proposed action would not be constructed. No ground would be disturbed, and no impacts to the existing physical or biological environment would take place. Current land and resource uses would continue. Economic return to the operators, and Federal and Local governments would be delayed, and a hardship would be placed on the operator's ability to process produced gas and relay that gas to market.

MANAGEMENT CONSIDERATIONS/RATIONALE FOR DECISION

The decision to approve MGR's proposed development is based on the following factors: 1) consistency with RMPs; 2) relevant resource and economic considerations; 3) agency statutory requirements; 4) national policy; 5) measures to avoid or minimize environmental harm; 6) public comments; and 7) finding of no significant impact.

1) **Consistency with Resource Management Plans (RMP).** The decision to approve MGR's proposal is in conformance with the overall management objectives for the area. The Kemmerer and Green River Resource Management Plans state that public land in the area of the proposal is open to consideration for exploration, leasing, and development for all leasable minerals. Standard and special protective measures were identified and incorporated into the Proposed Action to reduce or eliminate adverse impacts.

2) **Relevant Resource and Economic Considerations.** Environmental impacts identified in the EA are not considered significant when the identified mitigation measures are applied. The economic benefit of allowing the project is important, especially to the owners of the natural gas, the pipeline companies, and to a lessor extent, local, state, and federal governments.

3) **Agency Statutory Requirements.** All pertinent statutory requirements applicable to this proposal were considered. These include consultation with U.S. Fish and Wildlife Service regarding threatened and endangered species; consultation with the Corps of Engineers; and coordination with the State of Wyoming regarding wildlife, cultural resources, environmental quality, and oil and gas conservation.

4) **National Policy.** Private exploration and development of federal oil and gas leases is an integral part of the BLM oil and gas leasing program under authority of the *Mineral Leasing Act of 1920* and the *Federal Land*

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Policy and Management Act of 1976. The United States continues to rely heavily on foreign energy sources. Oil and gas leasing is needed to encourage development of domestic oil and gas reserves to reduce the United States' dependence on foreign energy supplies. Therefore, the decision is consistent with national policy.

5) **Measures to Avoid or Minimize Environmental Harm.** The adoption of the mitigation measures identified in the EA represent practicable means to avoid or minimize environmental harm.

6) **Finding of No Significant Impact.** As discussed in the EA, the direct and indirect incremental change to the environment introduced by implementation of the project on affected resources would be minimal. The adverse impacts have been mitigated such that the net change in cumulative impacts introduced by the project - in combination with past, present, and reasonably foreseeable actions - are expected to be insignificant. The EA concludes that the Proposed Action will not result in impacts that exceed the significance criteria defined for each resource and that with the mitigation measures described in the EA and contained in this decision, the Proposed Action will not have any significant impacts on the human environment. Therefore, an environmental impact statement is not required.

7) **Public Comments.** Six comment letters were received during the 30 day scoping period that ended February 10, 2003: 1) Office of Federal Land Policy, State of Wyoming; 2) United States Environmental Protection Agency; 3) The Shoshone-Bannock Tribes; 4) Ecological Services, USFWS; 5) Petroleum Association of Wyoming; 6) Qwest; 7) Department of Transportation. Their summarized comments and BLM's responses are in Appendix A.

The decision to approve MGR's project proposal takes into account important management considerations, Federal Agency missions, and the public's need for oil and gas. The decision balances these considerations with the degree of adverse impact to the natural and physical environment. The development effort will help meet public needs for oil and gas while at the same time allowing humans to coexist with nature in a way that allows the least degree of irreversible, irretrievable commitment of resources. The long-term productivity of the area would neither be lost nor substantially reduced as a result of approving MGR's proposal.

COMPLIANCE AND MONITORING

MGR and BLM will provide qualified representatives on the ground during and following construction to validate construction, reclamation, other approved design, and compliance commensurate with provisions of this Decision Record. MGR will be required to conduct monitoring of the project in cooperation with BLM. MGR will monitor its reclamation to ensure that revegetation meets the accepted standards. Appropriate remedial action will be taken by MGR in the event unacceptable impacts are identified.

APPEAL

This decision is subject to appeal as detailed below.

INFORMATION ON TAKING APPEALS TO THE BOARD OF LAND APPEALS FOLLOWS:

DO NOT APPEAL UNLESS

1. This decision is adverse to you.

AND

2. You believe it is incorrect.

IF YOU APPEAL, THE FOLLOWING PROCEDURES MUST BE FOLLOWED:

1.	NOTICE OF APPEAL	Within 30 days of the receipt of this decision, file a Notice of Appeal in the office which issued this decision (see 43 CFR 4.411 and 4.413). You may state your reasons for appealing, if you desire.
2.	WHERE TO FILE NOTICE OF APPEAL	Field Manager, Rock Springs Field Office 280 Highway 191 North Rock Springs, Wyoming 82901
	ALSO SEND COPY TO SOLICITOR	Office of the Regional Solicitor Rocky Mountain Region 755 Parfet Street, Suite 151 Lakewood, Colorado 80215
3.	STATEMENT OF REASONS	Within 30 days after filing the Notice of Appeal, file a complete statement of the reasons why you are appealing. This must be filed with the United States Department of the Interior, Office of the Secretary, Board of Land Appeals, 4015 Wilson Boulevard, Arlington, Virginia 22203 (see 43 CFR 4.412 and 4.413). If you fully stated your reasons for appealing when filing the Notice of Appeal, no additional statement is necessary.
	ALSO SEND COPY TO SOLICITOR	Office of the Regional Solicitor Rocky Mountain Region 755 Parfet Street, Suite 151 Lakewood, Colorado 80215

UNLESS THESE PROCEDURES ARE FOLLOWED YOUR APPEAL WILL BE SUBJECT TO DISMISSAL (SEE 43 CFR SEC 4.402). BE CERTAIN THAT ALL COMMUNICATIONS ARE IDENTIFIED BY SERIAL NUMBER OF THE CASE BEING APPEALED (WYW156822).

4.	ADVERSE PARTIES	Within 15 days after each document is filed, each adverse party named in the decision and the Regional Solicitor or Field Solicitor having jurisdiction over the State in which the appeal arose must be served with a copy of: (a) the Notice of Appeal, (b) the Statement of Reasons, and (c) any other documents filed (see 43 CFR 4.413). Service will be made upon the Associate Solicitor, Division of Energy and Resources, Washington D.C. 20240, instead of the Field or Regional Solicitor when appeals are taken from decisions of the Director (WO-100).
5.	PROOF OF SERVICE	Within 15 days after any document is served on an adverse party, file proof of that service with the United States Department of the Interior, Office of the Secretary, Board of Land Appeals, 4015 Wilson Boulevard, Arlington, Virginia 22203. This may consist of a certified or registered mail "Return Receipt Card" signed by the adverse party (see 43 CFR 3.301(c)(2)).

SUBPART 1821.2—OFFICE HOURS;TIME AND PLACE FOR FILING

Sec. 1821.2-1 Office Hours of State Office
(a) State Offices and the Washington Office of the Bureau of Land Management are open to the public for the filing of documents and inspection of records during the hours specified in this paragraph on Monday through Friday of each week, with the exception of those days where the office may be closed because of a national holiday or Presidential or other administrative order. The hours during which the State Offices and the Washington Office are open to the public for inspection of records are from 10 a.m. to 4 p.m., standard time or daylight saving time, whichever is in effect at the city in which each office is located.

Sec. 18212-2(d) Any document required or permitted to be filed under the regulations of this chapter, which is received in the State Office or the Washington Office, either in the mail or by personal delivery when the office is not open to the public shall be deemed to be filed as of the day and hour the office opens to the public.

Sec. 1821-2.2(e) Any document required by law, regulation, or decision to be filed within a stated period, the last day of which falls on a day the State Office or the Washington Office is officially closed, shall be deemed to be timely filed if it is received in the appropriate office on the next day the office is open to the public.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards.

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of the appellant's success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted.
4. Whether the public interest favors granting the stay.

SIGNATURE

Acting Field Manager, Rock Springs Field Office

9-4-03
Date

APPENDIX A

SUMMARY OF COMMENTS AND BLM'S RESPONSE TO THE SCOPING NOTICE FOR MOUNTAIN GAS RESOURCE INC.'S RENDEZVOUS PHASE IV NATURAL GAS PIPELINE PROJECT

Six comment letters were received during the scoping period that ended February 10,2003: 1) Office of Federal Land Policy, State of Wyoming; 2) The Shoshone-Bannock Tribes; 3) Ecological Services, USFWS; 4) Petroleum Association of Wyoming; 5) Qwest; 6) Wyoming Department of Transportation.

Office of Federal Land Policy, State of Wyoming

They forwarded letters from the State Historic Preservation Office; Wyoming Department of Transportation; Wyoming Department of Agriculture and Wyoming Game and Fish Department and the Office of State Lands and Investments.

State Historic Preservation Office

They sited Section 106 of the National Historic Preservation Act and Advisory Council regulations 36 CFR Part 800 regarding governing management of cultural resources on Bureau of Land Management lands, and provide the SHPO project control number for future correspondence dealing with the project.

Wyoming Department of Transportation

Expressed concern that use of WYDOT right-of-way should not be assumed for construction of this project and requested early contact with the District Maintenance Engineer.

Wyoming Game and Fish Department

Expressed concern that the environmental assessment address adequate reclamation of the pipeline corridor and specifically addressed concern over the crossing of the Green River and the Blacks Fork River.

Wyoming Department of Agriculture

Requested that BLM Officials continue to work with all grazing permittees and agriculture producers affected by this project to learn of their concerns and recommendations about the proposed policies and actions regarding this project.

Office of State Lands and Investments

Assuming Mountain Gas Resources, Inc will comply with the Rules and Regulations adopted by the Board of Land Commissioners in accordance with W.S. 36-2-107 and W.S. 36-9-118 in the event it is necessary to traverse state lands, and will be sensitive to state *land access issues, our office has no specific concerns regarding this action at this juncture of the NEPA process.*

Section 106 consultation has been completed and concurrence has been received from the State Historic Preservation Office on August 19, 2003.

Concerns expressed by the Wyoming Department of Transportation were forwarded to Mountain Gas Resources, Inc. to incorporate into their project planning.

Reclamation is a very important concern to the BLM and a reclamation plan has been incorporated into the plan of development for this project. The Green River and Blacks Fork River will be bored so as to minimize the effects to sensitive native fish species that occur in the Green River drainage.

In preparing the Environmental Assessment we have identified all users that would be affected by this action that are authorized through BLM permits. The project will be monitored by BLM and MGR to ensure that grazing permittees are notified when the construction will be within their area of use. Ramps for the use of livestock, wild horses, and other wildlife have been incorporated into the plan of development to provide escape in the event that something does fall into the trench.

The Shoshone-Bannock Tribes

The Shoshone-Bannock Heritage Tribal Office recommended that the following issues be addressed in the environmental assessment

- *Protection of Cultural Resources*
- *Amount of ground disturbance required for this project*
- *Coordination and consultation with tribes*
- *Affects to wildlife*

These items have been addressed in the environmental document. The entire route has been inventoried and concurrence has been received from the Wyoming State Historical Protection Office.

Ecological Service, United States Fish and Wildlife Service (Service)

In accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (50 CFR § 402.13) of the4 Act, they provided a list of threatened or endangered species, or species proposed for listing under the Act that my be present in the project area.

This list was used to determine what surveys were required for the proposal. Results of the surveys and mitigation that will be applied has been supplied to the Service to complete section 7 consultation. We have received concurrence of determinations made by the Bureau of Land Management for this project on August 28, 2003.

Petroleum Association Of Wyoming

The Petroleum Association of Wyoming (PAW) supports the proposal.

Thank you for your comments.

Qwest

Identified an existing fiber cable buried north of Mountain Gas Resources, Inc. in section 16, T18N, R111W, running east and west. Then fiber turns and is buried north from section 17 (Uinta Development Company), section 8 (BLM), section 5 (Uinta Development Company), west on County Road 4-2 and north on CR 4-16 into Granger.

This item of concern has been passed on to Mountain Gas Resources, Inc. to incorporate into their planning.

Wyoming Department of Transportation

In a second letter, Wyoming Department of Transportation outlined projects that have been planned in the future at locations were the pipeline will cross WYO 372 and US 30; additional projects associated with WYO 372 for FY2004 and a project on US 30 in FY 2007.

This information has been passed on to Mountain Gas Resources, Inc. to incorporate into their planning.

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ENVIRONMENTAL ASSESSMENT FOR THE RENDEZVOUS PHASE IV PIPELINE PROJECT, SUBLETTE AND SWEETWATER COUNTIES, WYOMING

WY-090-EA03-060

Prepared for:

Bureau of Land Management
Rock Springs Field Office
Rock Springs, Wyoming

and

Kemmerer Field Office
Kemmerer, Wyoming

and

Bureau of Reclamation
Provo, Utah

This Environmental Assessment was prepared by O&G Environmental Consulting, LLC, an environmental consulting firm, with guidance, participation, and independent evaluation of the Bureau of Land Management (BLM). The BLM, in accordance with Title 40 Code of Federal Regulations, Part 1506(a) and (b), is in agreement with the findings of the analysis and approves and takes responsibility for the scope and content of this document.

Prepared by:

O&G Environmental Consulting, LLC
Centennial, Colorado
Project 072

July 2003

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CHAPTER 1

PURPOSE AND NEED

1.0 INTRODUCTION

This Environmental Assessment (EA) examines the potential environmental impacts of the installation of a natural gas pipeline and a No Action alternative. Mountain Gas Resources (MGR) proposes to construct 55.5-mile long, buried, natural gas pipeline and related facilities between MGR's Granger Plant in Sweetwater County, Wyoming and the Bird Canyon Compressor Station in Sublette County, Wyoming (Figure 1-1). This proposed pipeline would be constructed adjacent to and parallel to existing MGR and other company pipelines that occupy a route that connects the Granger Plant with Bird Canyon Compressor Station. The pipeline would be utilized to transport natural gas on a year-round basis.

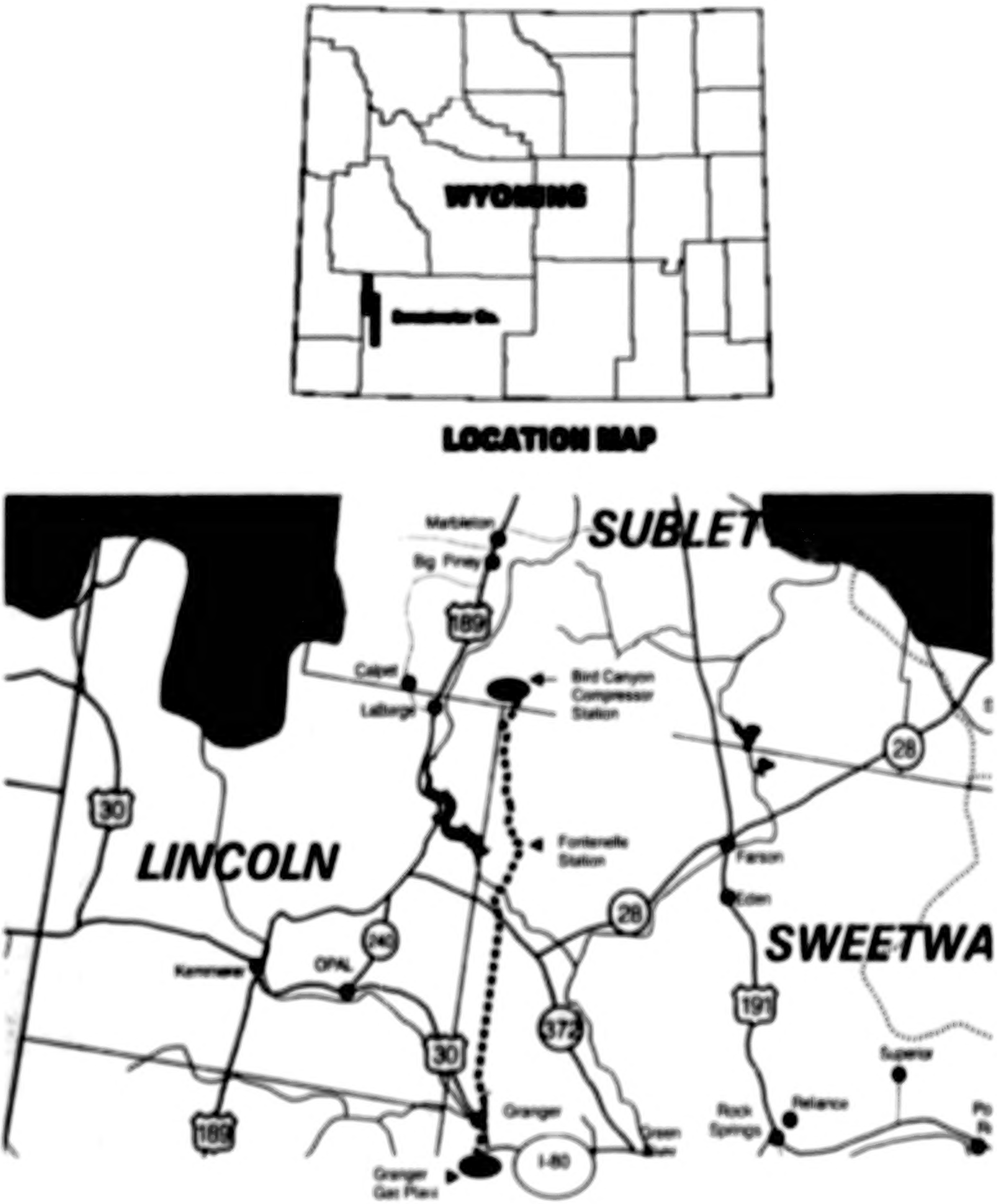
MGR seeks a right-of-way (ROW) grant of 30 years with options to renew for construction and operation of this pipeline from the U.S. Bureau of Land Management (BLM) for pipeline construction and operation on approximately 41.7 miles of BLM-administered federal lands crossed by the proposed pipeline. A temporary construction ROW width of 70 feet and a permanent ROW width of 50 feet are requested by MGR.

The BLM is the lead agency for this EA and the U.S. Bureau of Reclamation (BOR) is a cooperating agency. The proposed pipeline would pass through the far northwestern corner of lands managed by the Rock Springs Field Office and the eastern part of lands managed by the Kemmerer Field Office. State and local agencies and the public have been invited to participate in the environmental documentation process.

1.1 PURPOSE AND NEED

The proposed pipeline would allow operators to gather and transport natural gas produced from the Jonah, Moxa Arch, and Fontenelle Fields for delivery to multiple markets. The capacity of the existing pipelines in the area is insufficient to adequately transport the anticipated natural gas supplies that are increasing as a result of increased drilling in the area. The volume of natural gas and associated liquids transported would be approximately 500 million standard cubic feet per day. The pipeline would be utilized to transport natural gas on a year-round basis.

Natural gas is an integral part of the U.S. energy future due to its ready availability from domestic sources, the presence of an existing market delivery infrastructure, and the environmental advantages associated with this clean-burning fuel. The environmental advantages of natural gas combustion versus other conventional fuels are emphasized in the 1990



Source: D.R. Griffin & Associates
Scale: 1 inch = 18 miles

Figure 1-1 Proposed Pipeline Route
Rendezvous Phase 4 Pipeline
Bird Canyon Compressor Station to Granger, WY

Clean Air Act amendments (42 USC 7671 *et seq.*). Developing and transporting the abundant domestic reserves of natural gas helps to reduce national dependence on potentially unstable foreign suppliers and ensures an adequate, stable supply. Production of domestic natural gas ensures that the nation will maintain its economic well-being and promotes national security. Natural gas will continue to be domestically produced as long as sufficient delivery systems exist to sustain production.

This EA draws upon information and data gathered for the *Environmental Assessment for the Bird Canyon-Opal Pipeline, Granger Spur Pipelines, and One Compressor Station; Sublette, Sweetwater, and Lincoln counties, Wyoming* (BLM, 1999). This document was developed in response to the proposed installation of other pipelines along a route paralleled by the proposed pipeline analyzed in this EA.

1.2 PLANNING CRITERIA

1.2.1 Regulatory Conformance

The Record of Decision for the *Green River Resource Management Plan (RMP) Environmental Impact Statement (EIS)*, dated August 8, 1997, and the Record of Decision for the *Kemmerer RMP EIS*, dated April 29, 1986, directs the management for BLM lands crossed by the proposed pipeline project. These management plans recognize oil and gas development as a legitimate use of lands administered by the BLM and other federal agencies. They provide land use guidance for the development of oil and gas reserves, including transmission of hydrocarbons to distribution points by pipelines. The proposed Rendezvous Phase IV pipeline is in conformance with both RMPs. This EA incorporates applicable decisions, terms, and conditions of use described in the RMPs.

1.2.2 Regulatory Authorities

In accordance with the National Environmental Policy Act (NEPA) regulations, the BLM, as the lead agency, is required to evaluate actions proposed for implementation on federal lands to determine whether the Rendezvous Phase IV Pipeline Environmental Assessment adequately addresses current agency plans, functions, programs, and resource utilization. Preparation of this document was made in compliance with Council of Environmental Quality regulations (40 Code of Federal Regulations (CFR) 1500-1508) implementing NEPA and by BLM Handbook H-1790-1 (NEPA Handbook).

Pipelines installed on BLM lands require the issuance of a ROW, as authorized by the Mineral Leasing Act of 1920, as amended. Regulatory authorities and authorizing actions possibly applicable to the proposed pipeline project are listed in Table 1-1.

Table 1-1 Authorizing Actions Applicable to the Proposed Pipeline

Agency	Agency Action
Federal	
Bureau of Land Management, Rock Springs and Kemmerer Field Offices	NEPA compliance
	Approval of ROWs
	Special use permits
Bureau of Reclamation	NEPA compliance
	Permits for boring under roads
Department of Transportation	Pipeline regulation under 49 CFR Parts 191 and 192
Fish and Wildlife Service	Consultation for listed, threatened and endangered, and candidate species
Army Corps of Engineers	Section 404 permit for placement of dredged or fill materials into waters of the U.S.
	Permits for crossing waterways Green or Blacks Fork, including Nationwide #12 permit
State	
Department of Transportation	Conformance with applicable size and weight limits for trucks
	Permits for crossing or paralleling state highways
Department of Environmental Quality	
Water Quality Division	National Pollution Discharge Elimination System permit
Air Quality Division	Permit for pigging operations if fluids go to tanks
State Engineer's Office	Permit to take water
State Historic Preservation Office	Consultation for cultural resource inventory, evaluation, and mitigation
County	
Sublette and Sweetwater counties	Zoning certificates for site development and construction
	Small wastewater system permits, where applicable
	Road use agreements and/or oversize trip permits
	Construction permits and use fees
	Noxious weed control
	Permits to bore or trench county roads or for any crossing or access off a county road

1.3 PLANNING ISSUES

The BLM conducted an internal and public scoping process in January and February 2003. Appendix A presents the scoping letter and a list of the scoping letter recipients. The scoping letter included a list of planning criteria developed by the BLM to be addressed in the EA. The BLM received seven comment letters, six were from state agencies and offered no position with respect to the proposed pipeline. One letter indicated support for the Proposed Action.

1.3.1 Issues Identified During Public Scoping

The following issues and concerns were identified during the scoping period that ended on February 10, 2003.

- Socio-economic impacts to the counties and state, including local economy significance criteria.
- Cultural resources.
- Impacts to big game, sage grouse, raptors, and other sensitive species.
- Revegetation/reclamation of ROW.
- Impacts to Status I and Sensitive native fish species in the Blacks Fork River drainage.
- Impacts to the Green River fishery.
- Impacts from sediment entering Green River drainage.
- Impacts to grazing permittees, agricultural producers, and landowners.

1.3.2 BLM Planning Criteria

The scoping letter for the Proposed Action identified the following environmental topics, as identified by the BLM, to be addressed in the EA.

- Potential impacts to wildlife habitats within the analysis area including big game, sage grouse, Threatened and Endangered, Proposed, and Candidate species (mountain plover, prairie dogs/black-footed ferrets), and raptors.
- Threatened and Endangered and Candidate plant species.
- Road development, increased traffic, and associated impacts on existing county, state, and BLM roads.
- Social and economic impacts to local communities.
- Impacts to surface water, groundwater, and riparian and wetland areas, including depletions from the Colorado River system.
- Potential impacts to sensitive soils within the analysis area.
- Potential impacts to paleontological values within the analysis area.
- Reclamation of disturbed areas and control of noxious weed invasions.
- Potential conflicts with land uses including recreation and livestock management operations in the analysis area, including possible impacts to range improvements.
- Potential impacts to cultural and historical values within the analysis area.
- Cumulative effects of this proposed project and other ongoing or planned energy-related activities in the vicinity of the proposed pipeline.

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

2.0 INTRODUCTION

This chapter includes a description of the Proposed Action, including details of construction, operation, and reclamation, and a listing of applicant-proposed environmental mitigation measures. A discussion of alternative actions concludes this chapter.

2.1 THE PROPOSED ACTION

MGR proposes to construct a 55.5-mile long, buried, natural gas pipeline and related facilities, including valves, pigging equipment, side taps, and metering equipment in southwestern Wyoming (Figure 1-1). The pipeline would consist of:

- Approximately 37.6 miles of 20-inch pipeline from MGR's Granger Plant in SE¼ of Section 16, T18N/R111W, Sweetwater County to MGR's Fontenelle Compressor Station in W1/2 SE¼ of Section 14, T24N/R111W, Sweetwater County; and

- Approximately 17.9 miles of 16-inch pipeline from the Fontenelle Compressor Station to the Bird Canyon Compressor Station in NE¼ NE¼ of Section 34, T27N/R111W, Sublette County.

The proposed pipeline(s) would be buried to a minimum depth of 48 inches and would be located parallel and adjacent to existing pipelines and within its own ROW for nearly its entire length. In a few places, the proposed route leaves the immediate proximity of adjacent pipeline ROW to avoid an environmental issue or facility before returning to a position again immediately adjacent to an existing ROW. Approximately 75 percent of the land that would be crossed by the pipeline would be federal lands administered by the BLM and the BOR. Approximately two percent of the lands crossed are owned by the State of Wyoming. The remaining 23 percent are privately owned by the Union Pacific Land Resources Company (UPLRC) and Uintah Development (UD).

The pipeline would consist of 20-inch outside diameter pipe with 0.290-inch or 0.438-inch wall thickness, Grade X-70 pipe and 16-inch outside diameter pipe with 0.230-inch or 0.344-inch wall thickness, Grade X-70 pipe. Both would have a maximum operating pressure of approximately 1,440 psig. The volume of gas and associated liquids transported within the 20-inch pipeline would be approximately 325 million standard cubic feet per day (MMSCF/D). The volume of gas and associated liquids transported within the 16-inch pipeline would be approximately 170 MMSCF/D.

2.1.1 Design

The design and engineering of the proposed pipeline would be completed by MGR personnel or its contractors in accordance with safe and proven engineering practices. All pipeline plans and specifications, alignment sheets, road profiles, cross sections, site-specific details, and design drawings associated with the pipeline project would be available for review at MGR's office in Green River, Wyoming, and at the BLM Field Offices in Rock Springs and Kemmerer, Wyoming, prior to issuance of the ROW grant.

2.1.2 Rights-of-Way and Permits

MGR would secure all ROWs and permits necessary for construction prior to commencing construction operations. The total length of the ROW is approximately 293,058 feet (55.5 miles), of which 220,037 feet (41.7 miles) are on federal lands. MGR is requesting federal ROWs for a period of 30 years with options to renew for as long as there are marketable quantities of gas available. MGR would conduct all activities associated with the construction, operation, and termination of the pipeline within the authorized limits of the ROW.

MGR is requesting a permanent ROW width of 50 feet. During construction operations, MGR is requesting the temporary use of an additional 20-foot width of construction area for a total 70-foot wide construction ROW for the entire length of the pipeline under a temporary use permit (TUP). Additional space beyond the 70-foot width would be necessary for 52 temporary staging areas where the pipeline would cross a road, railroad, or river (Attachment "C" of April 17, 2003 Revised Plan of Development). The staging areas would increase the temporary ROW width by an additional 20 feet, from 70 feet to 90 feet, on both sides of each crossing, with the exception of the borings of the Green and Blacks Fork rivers. Use of a horizontal directional drill (HDD) at both river crossings would require a staging area of 150 feet by 300 feet on the south side of both rivers. A staging area of 100 feet by 100 feet would be required on the north side of both rivers. The length of the remaining temporary 90-foot wide staging areas for road crossings would be 100 feet with the exception of the 90-foot by 300-foot staging area for construction of the metering, pigging, and main line valve facilities at the Bird Canyon Compressor Station. Extra workspace may also be required at deep draws or sidehill cuts for the storage of topsoil and subsoil.

All road and utility permits would be secured from the appropriate regulatory agency prior to construction. MGR would also secure all ROWs on non-federal lands prior to pipeline construction. MGR would notify authorized ROW users of MGR's proposed pipeline crossings or overlaps on the surfaces occupied by the affected ROW users. Table 2-1 shows the surface disturbance associated with constructing the proposed pipeline. Surface disturbance would occur upon undisturbed land as well as previously disturbed land within the proposed pipeline ROW. The proposed pipeline route locates the pipeline adjacent to or between existing pipelines. Some of this land was disturbed when the previous pipelines were constructed. An attempt to distinguish between and quantify the amount of previously undisturbed land and previously disturbed land that would be affected by the proposed pipeline was not made. All lands

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disturbed by the construction of the proposed pipeline would be treated identically. Reclamation efforts would be the same.

Table 2-1 Surface Disturbance Summary

	Miles	Acres Disturbed 50-foot Permanent ROW	Acres Disturbed 70-foot Temporary ROW and Staging Areas
Pipeline	55.5	336.5	470.9
Temporary Staging Areas			7.0
Total	55.5	336.5	477.9

2.2 SCHEDULE

Pipeline construction would commence after all permits and ROW documents are secured, and authorization is received from the appropriate regulatory agency. MGR would notify the authorized officers of the appropriate agencies five days prior to commencing construction activities. All private surface landowners would be contacted prior to construction to ensure access to the surface.

Mobilization of field personnel, materials, and equipment would require five working days. Approximately one mile of pipe would be constructed on each working day. Construction of the proposed pipeline would occur in a planned sequence of operations along the route and would last approximately three to four months. Construction procedures have been developed to ensure that pipeline installation occurs as quickly as possible. After the entire length of the pipeline is constructed, the pipeline would be hydrostatically tested for integrity over a period of five days.

2.2.1 Construction

MGR has placed survey flags along the proposed route. All equipment and vehicular access to the pipeline project would be confined to existing roads and the established ROW. No major reconstruction or rerouting of these roads would be necessary. The construction of the pipeline would not inhibit public use of existing roads and trails, nor would it inhibit wildlife or livestock movement. Mainline pipeline construction techniques are described in the following paragraphs.

2.2.1.1 Clear and Grade

In preparation for the pipeline installation, the ROW would be cleared and graded to provide a smooth work area to facilitate the safe movement of equipment and personnel. A motor grader with a blade would be used to knock down vegetation such as sage brush. Grading usually requires cutting or filling to achieve a more uniform slope for the pipeline and may include ripping rock close to the surface. Blading across the width of the ROW may also be required to provide a safe and suitable working area where there are steep hillsides, approaches to cuts, gullies, stream bank crossings, or established work stations. The top six inches of soil would be removed during blading operations and stock piled on the side of the ROW. Topsoil would be

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windrowed along the nonworking side of the trench. After the final grading occurs, the topsoil would be redistributed over the area from which it was taken. Disturbed areas would be seeded after the ROW is restored to its original contours. Soil density would also be restored to the extent practicable. Soil ripping the working side of the ROW may be necessary to break-up compaction.

Vehicular traffic across/through drainage channels would be limited to sloping drainage sides or to vertical banks of less than two feet. Drainage crossings would be aligned perpendicular to the stream channel.

2.2.1.2 Hauling and Stringing

All construction materials would be hauled to the job by 80-foot pole trailers and placed along the ROW as they arrive. Pipe would be assembled to cause the least amount of interference with the normal use of the land crossed by the ROW.

2.2.1.3 Ditching

A wheel trencher would be used to dig a 42-inch wide trench. The spoil would be placed adjacent to the ditch. In rocky areas or areas where the pipeline changes direction, an excavator would be used to excavate. The ditch would be excavated to a depth sufficient to maintain at least a 48-inch cover over the pipeline. Spoil would be windrowed separately from the topsoil along the nonworking side of the trench.

2.2.1.4 Road Crossings

Heavier pipe would be used at road crossings to withstand greater external loads. Roads that are more heavily traveled would be bored to avoid disrupting traffic. Roads that are not heavily used would be open cut. The open cut roads would be backfilled and compacted after pipeline installation so that the integrity of the road would be maintained. Two track roads or trails that are rarely traveled and do not usually accommodate heavy loads would use mainline construction techniques.

2.2.1.5 Bending, Welding, and Coating

A bending machine would be used to bend the pipe to fit the ditch and accommodate the contour of the land. Prefabricated pipe bends would be used for changes in direction greater than 30 degrees. The mainline welding crews would align the pipe for welding and complete the welding of the pipeline above the trench. The welds would be nondestructively inspected with X-rays to ensure the quality of the weld. The pipe string would be temporarily stored on skids until being lowered into the trench.

Although the pipe is manufactured with a corrosion resistant coating, crews would apply additional coating to the weld areas and would repair damage to the factory-applied coating, if necessary, in order to further minimize the possibility of corrosion. Cathodic test stations would be installed at all foreign pipeline crossings, on one side of all road bores, and every one-mile along the pipeline at a minimum. These stations would be used to test and monitor the corrosion resistance of the pipeline during gas transmission operations.

2.2.1.6 Lowering In, Padding, and Backfilling

Side booms would be used to lower the pipe into the trench. In rocky areas, the trench would be padded with sand or soil using a padding machine that separates rocks from the padding materials.

After the pipe is placed in the ditch, a motor grader or caterpillar would be used to push the spoil back into the trench. The fill on the trench would then be tamped into place with the grader wheels, leaving a crown of four inches to accommodate settling. Excavated material that cannot be placed in the trench would be disposed of in conformance with landowner and agency requirements.

2.2.1.7 Horizontal Directional Drills (HDD)

In areas where it is impractical to use conventional mainline construction techniques, or where environmentally sensitive areas exist, a HDD may be used. Using the HDD, the pipeline can be constructed beneath environmentally sensitive or difficult construction areas without requiring equipment to enter the area. The HDD allows a pilot hole to be drilled beneath the surface at a depth that maintains minimum coverage requirements. After the pilot hole has been successfully drilled, the hole is enlarged with a reamer. After the bore hole has been enlarged to a diameter sufficiently large enough to receive the mainline pipe, a pre-welded and pre-tested section of pipe is pulled into it from the side of the bore hole opposite the drilling equipment. The pipe would be coated with abrasion resistant coating before placement into the bore hole. The annulus around the mainline pipe would then be sealed with bentonite.

2.2.1.8 Fabrication/Tie-Ins

The mainline valve assemblies, pig receivers, pig launchers, side taps, and meter stations would be prefabricated off site. The assemblies would be installed into the pipeline on location. Tie-in crews would be used to complete the final installation of fabricated assemblies at road crossings and other difficult construction locations.

2.2.1.9 Hydrostatic Testing

After the trench is backfilled, the proposed pipeline would be pressure tested with water. The pipeline would be filled with water and pressurized to a minimum of 1.1 times the designated operating pressure for eight hours to verify integrity. Test water would be obtained from the Blacks Fork and Green rivers and either pumped directly to the pipeline or transported by truck to the pipeline for testing. Approximately 7.1 acre-feet would be withdrawn from the Blacks Fork River; approximately 5.1 acre-feet would be withdrawn from the Green River. The two withdrawal points confined within the construction ROW would be located at milepost 4.2 on the 20-inch pipeline (Blacks Fork River) and again at milepost 31.4 (Green River)(Appendix B). Permits or license agreements for water withdrawal would be obtained from the Wyoming State Engineer's Office and the BOR. Written approval of the hydrostatic water testing and subsequent discharge operations would be secured via a temporary discharge permit by MGR from the Wyoming Department of Environmental Quality, Water Quality Division. The test water would be tested and treated, if necessary, to ensure that it meets local, state, and federal water quality standards and permit conditions prior to its release. Used hydrostatic test waters would be discharged at four locations along the proposed pipeline: milepost 4.2, 20-inch pipeline; milepost 31.4, 20-inch pipeline; milepost 4.5, 16-inch pipeline; and milepost 8.4, 16-inch pipeline (Appendix B). In order to prevent scouring and erosion, test water would be discharged into energy dissipation devices, filter bags, or straw bale dewatering structures. They would be removed after the water is released.

2.2.1.10 Manpower and Equipment Requirements

All materials, construction, operation, maintenance, and termination operations for the proposed pipeline would be completed by MGR personnel or their contractors in accordance with safe and proven engineering practices. The construction force would range from 100 to 150 persons at the peak of construction. Temporary work camps would not be needed.

Construction equipment that would be required to complete the pipeline project consists of the following: 15 welding trucks, six tractor trailers, three two-ton trucks, 15 pickup trucks, two dump trucks, two seed drillers and tractors (if necessary), two rubber-tired backhoes, eight trackhoes, 10 side boom caterpillar, two-wheel trenchers, five D7 dozers, one fuel truck, one low head pump, one pressure pump, one 1,750 cubic feet per minute (cfm) air compressor, one 1,200 cfm air compressor, and two motor graders.

2.2.1.11 Hazardous Materials

MGR would comply with all applicable existing and subsequently promulgated federal or state laws with respect to hazardous substances.

Hazardous waste would not be generated in association with the construction of the pipeline. A release of a hazardous substance, such as a leak or spill, in excess of the reportable quantity as established by 40 CFR Part 117.3, would be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, Section 102 B. A copy of the report required by a federal or state agency of a reportable release or spill of any hazardous material would be furnished to the authorized officer of the regulatory authority within five working days of the occurrence of the spill or release. No toxic substances are proposed for use in connection with construction; however, if toxic substances are necessary, their usage would comply with provisions of the Toxic Substances Control Act of 1976, as amended (40 CFR Part 702-799).

Table 2-2 lists the hazardous and extremely hazardous materials, as identified in the EPA's Consolidated List of Chemicals Subject to Reporting under Title III of the Superfund Amendments and Reauthorization Act of 1986, and 40 CFR 355 that MGR would use during construction of the pipeline. Quantities would be limited to only the amounts needed for construction. Fuels would not be stored on location and would be provided by a vehicle that refuels and services pipeline machinery. Material Safety Data Sheets would be maintained by MGR for all materials used.

Table 2-2 Hazardous and Extremely Hazardous Materials Used for Construction of the Proposed MGR Pipeline

Material	Approximate Quantity	Hazardous Substances	CAS Number
Miscellaneous Materials			
Antifreeze	unknown	Acrolein	107-02-8
		Cupric sulfate	7758-38-7
		Ethylene glycol	107-21-1
		Freon	76-13-1
		Phosphoroic acid	766-38-2
		Potassium hydroxide	1310-58-3
		Sodium hydroxide	1310-73-2
		Triethylene glycol	112-27-6
Batteries	unknown	Cadmium	7440-43-9
		Lead	1306-19-0
		Nickel hydroxide	7440-02-0
		Potassium hydroxide	1310-58-3
		Sulfuric acid	7664-93-9
Cleaners	unknown	Hydrocholoric acid	7647-01-0
Fuels			
Diesel fuel	unknown	Benzene	71-43-2
		Cumeme	98-82-8
		Ethylbenzene	100-41-4
		Methyl tert-butyl ether	1634-04-4
		Naphthalene	91-20-3
		PAHs	-
		POM	-
		Toluene	108-88-3
		m-Xylene	108-38-3
		o-Xylene	95-47-6
		p-Xylene	106-42-3
Gasoline	unknown	Benzene	71-43-2
		Cumeme	98-82-8
		Cyclohexane	110-82-7
		Ethylbenzene	100-41-4
		n-Hexane	110-54-3
		Methyl tert-butyl ether	1634-04-4

Material	Approximate Quantity	Hazardous Substances	CAS Number
		Naphthalene	91-20-3
		PAHs	-
		POM	-
		Tetraethyl lead	78-00-2
		Toluene	108-88-3
		m-Xylere	108-38-3
		o-Xylene	95-47-6
		p-Xylene	106-42-3
Natural Gas	unknown	n-Hexane	110-54-3
		PAHs	-
		POM	-
Pipeline Materials			
Coating	unknown	Aluminum oxide	1334-28-1
Cupric sulfate solution	unknown	Cupric sulfate	7758-98-7
Diethanolamine	unknown	Diethanolamine	111-42-2
LP gas	unknown	Benzene	71-43-2
		n-Hexane	110-54-3
		Propylene	115-07-1
Molecular sieves	unknown	Aluminum oxide	1344-28-1
Pipeline Primer	unknown	Napthalene	91-20-3
		Toluene	108-88-3
Potassium hydroxide	unknown	Potassium hydroxide	1310-58-3
Rubber resin coatings	unknown	Acetone	67-64-1
		Coal tar pitch	68187-57-5
		Ethyl acetate	141-78-6
		Methyl ethyl ketone	78-93-3
		Toluene	108-88-3
		Xylene	1330-20-7
Fertilizers	unknown		
Lead-free thread compound	unknown	Copper	7440-50-8
Lubricants	unknown	1,2,4-trimethylbenzene	95-63-6
		Barium	7440-39-3
		Cadmium	7440-43-9
		Copper	7440-50-8
		n-Hexane	110-54-3
		Lead	7439-92-1
		Manganese	7439-96-5
		Nickel	7440-02-0
		PAHs	-
		POM	-
		Zinc	7440-66-6
Motor oil	unknown	Zinc compounds	-
Paints	unknown	Aluminum	7429-90-5
		Barium	7440-39-3
		n-Butyl alcohol	71-36-3
		Cobalt	7440-48-4
		Lead	7439-92-1
		Manganese	7439-96-5
		PAHs	-
		POM	-
		Sulfuric acid	7664-93-9

Material	Approximate Quantity	Hazardous Substances	CAS Number
		Toluene	108-88-3
		Triethylamine	121-44-8
		Xylene	1330-20-7
Sealants	unknown	1,1,1-Trichloroethane	71-55-6
		n-Hexane	110-54-3
		PAHs	-
		POM	-
Solvents	unknown	1,1,1-Trichloroethane	71-55-6
		Acetone	67-64-1
		t-Butyl alcohol	75-65-0
		Carbon tetrachloride	56-23-5
		Isopropyl alcohol	67-63-0
		Methyl ethyl ketone	78-93-3
		Methanol	
		PAHs	-
		POM	-
		Toluene	108-88-3
		Xylene	1330-20-7
Starting fluid	unknown	Ethyl ether	60-29-7

2.2.1.12 Fire Control

MGR would notify the regulatory authority of fires occurring during construction and would comply with all applicable rules and regulations concerning the use, prevention, and suppression of fires on federal lands. MGR would designate a representative to be in charge of fire control during pipeline construction. The fire representative would ensure that each construction crew has fire fighting tools and equipment, such as extinguishers, shovels, and axes, available at all times. The number of tools available would reflect the number of persons working on the crew.

In the event of a fire, MGR or its contractors would initiate fire suppression actions in the work area. Suppression would continue until the fire is out or until the crew is relieved by the authorized representative of the agency upon whose land the fire occurred. Heavy equipment would not be used for fire suppression outside the ROW without prior approval of the regulatory authority unless there is imminent danger to life or property. MGR or its contractors would be responsible for all costs associated with the suppression of fires and the rehabilitation of fire damage resulting from their operations or employees.

2.2.2 Operation and Maintenance

MGR would conduct all activities associated with the operation, maintenance, and termination of the ROW within the authorized limits of the ROW. Pipeline warning signs would be installed at line-of-sight intervals at road crossings to identify the pipeline's location in the ROW.

The pipeline would be routinely patrolled and inspected by foot or by vehicle to initiate routine preventive maintenance and check on general ROW condition. The inspections would identify eroded areas, unauthorized encroachment on the ROW, conditions that could cause safety hazards, or other potential problems. If pipeline damage were to occur from external sources and repair or replacement of the portion of the pipeline were necessary, detailed line break and emergency procedures would be used as MGR's routine operational procedures, as detailed by the company's safe operating procedures manual.

MGR would be responsible for weed control on the disturbed areas within the established limits of the ROW. MGR would coordinate with the authorized officer of the appropriate regulatory authority or local authorities to obtain acceptable weed control methods for the disturbed areas within the ROW limits. Before using pesticides, including use for emergency situations, MGR would obtain written approval of its plan detailing the type and quantity of material to be used, pests to be controlled, method of application, location of storage, disposal of containers, and any other information deemed necessary by the regulatory agency. If pesticides were required, MGR would comply with all applicable federal and state laws. Pesticides would be used in accordance with registered uses and within limitations imposed by the appropriate regulatory authority.

2.2.3 Reclamation and Abandonment

Initial reclamation would be accomplished following the completion of the hydrostatic pipeline testing. The ROW would be restored in accordance with the agency's/landowner's specifications. All disturbed areas would be re-contoured so that the disturbed area is visually consistent with the surrounding terrain. Topsoil would be evenly spread across the ROW. Erosion would be prevented by the use of construction diversion terraces, rip-rap, matting, and water bars. No berms of mounds would be created over the backfilled trench in anticipation of subsidence.

MGR proposes to conduct operations on BLM- and BOR-administered lands and U.S. Army Corps of Engineers (ACE)-regulated stream and wetlands crossings in accordance with the following stipulations:

- Certified weed-free seed would be used during re-seeding of disturbed areas.
- Native plant species would be used in re-seeding.
- Noxious weed control would be conducted for the life of the pipeline project (30 years).
- Monitoring for noxious weeds and for the success of vegetation establishment following initial and any subsequent plantings would be conducted.
- All compacted areas would be ripped to the necessary depth to reduce compaction prior to seeding at the request of the BLM and/or BOR field agent.
- Surface disturbance would be minimized during pipeline construction.
- Water breaks would be installed on slopes following criteria presented in Figure 10 of the Gold Book.
- Contour furrows, water bars, and/or erosion control blankets would be installed to limit conditions favorable for accelerated erosion at the request of the BLM and/or BOR field agent.
- Restore channel cross-sections of ephemeral stream channels to pre-disturbance contours.

- Ephemeral stream crossings by the pipeline during construction, and following reclamation until the agencies determine disturbed areas have been stabilized and a 70 percent cover density of native vegetation has been established, would be monitored to identify and mitigate conditions of accelerated erosion within the pipeline ROW.

All disturbed areas along the pipeline ROW would be reseeded to the applicable specifications, including components of the seed mixture and application rate. Where suitable, seed would be planted using a drill. In unsuitable areas, the seed would be broadcasted and raked or chained to ensure sufficient soil cover. MGR would be responsible for weed control on the disturbed areas within the established limits of the ROW. MGR would coordinate with the authorized officer of the appropriate regulatory authority or local authorities to obtain acceptable weed control methods for the disturbed areas within the ROW limits. All access roads would be left in as good or better condition.

A typical upland site seed mixture is shown in Table 2-3.

Table 2-3 Typical Upland Seed Mixture and Rates

Species	Variety	Drill Seeding Rate
Western Wheatgrass (*Pascopyrum smithii*)	Rosanna	4 lbs/acre pure live seed (PLS)
Sandberg bluegrass (*Poa sandbergii*)		4 lbs/acre PLS
Thickspike Wheatgrass (*Elymus lanceolatus*)	Critana	4 lbs/acre PLS
Indian Ricegrass (*Achnatherum hymenoides*)		4 lbs/acre PLS
Shadscale (*Atriplex confertifolia*)		2 lbs/acre PLS
Scarlet Globemallow (*Sphaeralcea coccinea*)		1 lbs/acre PLS
Winterfat (*Krascheninnikovi lanata*)		2 lbs/acre PLS
Fourwing Saltbush (*Atriplex canescens*)		2 lbs/acre PLS
Total		23 lbs/acre PLS

MGR would comply with all federal and state laws for herbicide uses and with registered uses and limitations imposed by the authorized officer. Prior to using herbicides, MGR would obtain written approval from the authorized officer of a plan showing the type and quantity of material to be used, the pest(s) to be controlled, the application methods, the storage locations, the container disposal protocol, and any other information deemed necessary by the authorized officer.

Prior to abandonment, MGR would obtain authorization from the appropriate regulatory agency. The pipeline and all aboveground pipeline facilities would be subsequently removed and unsalvageable materials would be disposed of at approved sites. Regrading and revegetation of disturbed land areas would be completed where necessary.

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2.3 SUMMARY OF APPLICANT-PROPOSED MITIGATION MEASURES

MGR would comply with all conditions of approval (COAs) applicable to the construction of pipelines as required by the Kemmerer and Rock Springs Field Offices. The construction of the pipeline shall not inhibit public use of existing roads and trails, or inhibit wildlife or livestock movement. MGR shall not open any more trench than can be successfully backfilled and compacted in a two-day period. Portions of the proposed ROW within 0.25 mile of livestock will be fenced if required by the BLM field agent.

2.3.1 Regulatory Compliance

MGR would hire third-party environmental inspectors who would report to its lead environmental inspector. The environmental inspector would be responsible for ensuring that all necessary permits are obtained and that approved copies would be kept in the field during construction. He also would ensure that the construction complies with all permits and regulatory documents. Documentation of regulatory concurrences would be provided by MGR to the appropriate regulatory authority upon request.

2.3.2 Survey Monuments

MGR would protect all survey monuments, witness corners, and reference monuments within the ROW against disturbance during construction, operation, maintenance, and reclamation. If any monument, corner, or accessory were to be destroyed, obliterated, or damaged, MGR would arrange for a registered land surveyor to restore the monument, corner, or accessory using surveying procedures specified in the Manual of Surveying Instruction for the Survey of Public Lands of the United States, 1973 edition. MGR would record the survey in the appropriate regulatory office.

2.3.3 Waste and Litter

Construction sites would be maintained in a sanitary condition at all times. MGR would implement an agency-approved litter policing program that would encompass all roads and sites associated with the ROW and pipeline installation. The program would encompass all roads and sites associated with the ROW.

Waste materials at the sites would be disposed of promptly at an appropriate waste disposal site. Waste materials would include all discarded matter, including human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

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2.3.4 Fire Control

MGR would notify the authorized officer of any fires during construction and would comply with all rules and regulations administered by the authorized officer concerning the use, prevention, and suppression of fires on federal lands. In the event of a fire on federal lands, MGR or their contractors would initiate fire suppression actions in the work area. Suppression would continue until the fire is out or until the crew is relieved by an authorized representative of the BLM. Heavy equipment would not be used for fire suppression outside the approved ROW without prior approval of the authorized officer unless there is imminent danger to life or property. MGR or their contractors would be responsible for all costs associated with the suppression of fires and rehabilitation of fire damage resulting from their operations, employees, or contractors.

MGR would designate a representative to be in charge of fire control during pipeline construction. The fire representative would ensure that each construction crew has fire fighting tools and equipment, such as extinguishers, shovels, and axes, available at all times. The number of tools needed would depend on the number of personnel working in the area. MGR would, at all times during construction, maintenance, and operations, require that satisfactory spark arresters be maintained on internal combustion engines.

2.3.5 Soil Resources

MGR would discontinue construction or routine maintenance activities during periods when soil is too wet to adequately support construction equipment or when the equipment creates surface ruts greater than four inches deep. Construction activities would be suspended until soil conditions improve. MGR would conduct stabilization and reclamation efforts consistent with those measures proposed in Section 2.2.3.

2.3.6 Visual Resources

All permanent above-ground facilities, piping, and valving would be painted a flat, non-contrasting color in harmony with the surrounding landscape, probably Carlshad Canyon (2.5Y 6/2) or as specified by the regulatory authorities.

2.3.7 Cultural Resources

MGR and its contractors would educate their employees prior to project initiation about relevant federal regulations protecting cultural resources. If cultural remains, monument sites, objects, or antiquities subject to the Antiquities Act of June 8, 1906, the Archaeological Resources Protection Act of 1979, or the National Historic Preservation Act of 1966 were discovered during construction, activities would immediately cease and the appropriate regulatory authority would be notified. After evaluation by the authority and if the discovery were determined to be significant, MGR would act according to the direction received from the regulatory authority. That direction may include a recovery or avoidance plan

An open trench inspection would be conducted on the pipeline by a qualified professional archaeologist in accordance with the recommendations presented in Class III Cultural Resource Inventory for the Mountain Gas Resources Rendezvous Phase IV Pipeline, Sublette and Sweetwater Counties, Wyoming (Stainbrook and Yerkovich, 2003). Previously unknown or unanticipated resources found during this activity would be recorded, tested, and evaluated in consultation with the Wyoming State Preservation Office and in accordance with cultural resource compliance procedures detailed in Appendix C to the Class III Inventory Report (Stainbrook and Yerkovich, 2003).

MGR would comply with BLM and State Historic Preservation Office (SHPO) recommendations for crossings of historic trails. Trails would be crossed in areas of existing disturbance. MGR would bore the Emigrant Trail Crossing. Undisturbed portions of trails would not be affected by the proposed pipeline. Historic trail segments would not be used by MGR or its contractors to access the pipeline ROW.

Specific mitigative measures to be employed include:

- Procedures for avoiding and/or minimizing impacts to cultural resources promulgated under the National Historic Preservation Act would be applied prior to and during construction of the proposed pipeline.
- When crossing the Sublette Cutoff (48SW1841), MGR proposes to bore under the eligible property (Stainbrook and Yerkovich 2003).
- When crossing the remaining historic trails (48SW4195, 48SW4197, 48SW827, and 48SW827/6274), construction will remain within previous disturbances (Stainbrook and Yerkovich, 2003).
- When crossing the Mayfly Site (48SW6926), MGR proposes to bore under the eligible property (Stainbrook and Yerkovich 2003).
- When crossing Site 48SW1673, construction is confined between the fencing at Discoveries A and B, housepits, and the previous disturbances along the eastern boundary of the site (Stainbrook and Yerkovich, 2003).

2.3.8 Paleontological Resources

The following areas crossed by the proposed pipeline that are underlain by the Bridger Formation (Lower Bridger or Bridger A) would be checked by a qualified professional paleontologist for fossil vertebrate material after excavation of the pipeline trench because of the high potential for vertebrate fossil occurrence:

- Sections 9, 28, 33, and 34, T23N/R111W;
- Section 36, T22N/R111W, Section 12 T21N/R111W, Section 26 T21N/R111W, and Section 4, T20N/R111W; and
- Section 16, T22N/R111W and Section 4, T19N/R111W.

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Section 36, T22N/R111W and Section 12, T21N/R111W are most significant in that they now include three University of California Museum of Paleontology vertebrate fossil localities that produce scientifically significant fossil turtles and fish.

MGR and its contractors would educate their employees prior to project initiation about relevant federal regulations protecting paleontological resources. If paleontological resources were uncovered during construction activities, MGR and its contractors would suspend all operations to prevent further disturbance and would immediately contact the appropriate regulatory authority. If the discovery is determined to be significant, MGR would act according to the direction received from the regulatory authority. That direction may include a recovery or avoidance plan. Mitigation of impacts to paleontological resources would occur on a case-by-case basis, and MGR would be responsible for the costs. MGR would abide by the mitigation plan approved by the regulatory authority.

2.3.9 Air Quality/Noise

All vehicles and construction equipment would be maintained to minimize exhaust emissions and would be properly muffled to minimize noise. Disturbed areas would be watered as necessary to suppress dust. Noise from construction activities would be of short duration.

2.3.10 Stream and Wetland Crossings

MGR would bore under the Green River and Blacks Fork River and their associated wetlands, avoiding surface disturbance and impacts to wetlands. Boring staging areas on either side of the rivers would be located far enough away from the stream channels to ensure that bank stability and wetlands/riparian areas are not affected. All fueling, servicing, and staging of vehicles would occur at a minimum distance of 500 feet from rivers, streams, or riparian areas. Banks of intermittent drainages would be returned and stabilized to the original slope.

2.3.11 Wildlife

MGR would comply with the guidelines and procedures instituted by the appropriate regulatory authority with respect to wildlife management:

> Big Game. No construction would be allowed between November 15 and April 30 in severe winter relief and/or crucial antelope winter ranges unless authorized to do so in writing by the Authorized Officer following on-the-ground reviews and coordination with appropriate parties. Gaps, with sloping sides, in the open trench would be placed every 0.5 mile to allow the animals to escape the trench should they fall in.
>
> Raptors. Where feasible, pipeline ROWs and areas requiring TUPs would be selected and designed to avoid disturbance to raptor nests. MGR would conduct surveys for raptor nests within one mile of the proposed pipeline route if construction activities were

to occur between February 1 and July 31. The purpose of the surveys would be to determine nest activity. All construction activities would be restricted between February 1 and July 31 within one mile of occupied ferruginous hawk nests. All construction activities would be restricted between February 15 and August 15 within one mile of occupied bald eagle nests. All construction activities would be restricted within 0.5 mile of all other occupied raptor nests. Surface structures requiring repeated human presence would not be constructed within 825 feet of active raptor nests, where practical. An active raptor nest is considered to be a nest that has been occupied within the past three years. Surface structures requiring repeated human presence would not be constructed within 2,000 feet of active bald eagle nests.

Sage Grouse. Surface disturbance within 0.25 mile of any sage grouse lek would be avoided. If construction activities were planned in potential sage grouse nesting habitat (i.e., areas within 2 miles of an active lek) between February 1 and July 31, BLM wildlife biologists would conduct field evaluations to identify active nests or leks. If an active sage grouse nest were identified in an area proposed for disturbance, construction activities would be delayed until nesting is completed and the young are fledged.

2.3.12 Wild Horses

Gaps, with sloping sides, in the open trench would be placed every 0.5 mile to allow the animals to escape the trench should they fall in.

2.3.13 Threatened and Endangered (T&E) and Sensitive Species

The BLM would conduct U.S. Fish and Wildlife Service (USFWS) consultation and coordination, as necessary, to determine mitigation activities relating to T&E, candidate species and their habitats. In areas that have not been previously surveyed or cleared for these species, MGR would retain a qualified biologist/botanist to conduct surveys in areas of potential habitat prior to construction activities. If T&E, listed, candidate, or sensitive species were found, consultation with the USFWS would be initiated, as necessary, and construction activities would be curtailed until the BLM, USFWS, and MGR concur upon a course of action. Clearance surveys for black-footed ferrets are scheduled for the first two weeks of July 2003, when MGR's qualified biologists will inspect prairie dog colony habitat.

2.3.14 Vegetative Species

MGR would conduct site-specific surveys for sensitive plants on uncleared areas, as directed by the appropriate regulatory agency. MGR would protect bearing trees within the ROW against disturbance during construction, operation, maintenance, and reclamation.

2.3.15 Invasive/Noxious Weeds

- Incorporate best known weed prevention measures as outlined in Appendix 4 of Partners Against Weeds: An Action Plan for the Bureau of Land Management.
- Incorporate invasive/noxious weed management strategies into the pre-construction planning and design process for all surface disturbance activities including road, pipeline, and ancillary facility construction.
- Inventory and remove existing invasive/noxious weed seed sources that could be transported into relatively weed-free areas by passing vehicles.
- Clean muddy off-road equipment before moving into relatively weed-free areas.
- Stabilize disturbed areas and reestablish vegetation on all bare ground using mixtures and treatment guidelines prescribed in the approved ROW as soon as practical to minimize weed spread.
- Store gravel, top soil and fill in relatively weed-free areas.
- Where possible, limit access to all disturbed sites to ensure that desired species are thriving and invasive/noxious weeds are not present. Treat, reseed, and fertilize as necessary.
- Monitor roads and other disturbed areas throughout the life of the pipeline project and for three years after reclamation to insure that invasive/noxious weeds are identified and eradicated.
- Ensure that all invasive/noxious weed control measures adhere to standards in the Decision Record for the Rock Springs District Noxious Weed Control EA or applicable updated guidance.
- Cooperate with the Sublette and Sweetwater County Weed and Pest Districts to identify appropriate methods of weed control.
- Before treatment of invasive /noxious weeds, submit Pesticide Use Proposal (PUP) to the BLM for approval, ensure that all pesticides intended for use are on the BLM's approved label list for use on public lands (the label is updated each year). The PUP(s) must be approved prior to any spraying. PUPs can be approved for up to a three-year period.
- Ensure that pesticide applicators are certified with an up-to-date Pesticide Applicator's License before performing spraying work.
- Submit Pesticide Application Records to the BLM RSFO/KFO each year. Ensure that treatments comply with all federal and state regulations regarding use of pesticides, including those outlined in the following:

    - BLM Information Bulletin No. WY-98-106, *Weed Management Guidance*;
    - Instruction Memorandum No. WY-99-29, *Executive Order #13112: Invasive Species*;
    - Washington Information Bulletin No. 99-110, *Submission of Pesticide Use Report;*
    - Information Bulletin No. WY-200-25, *Annual Pesticide Use Report.*

2.4 ALTERNATIVES

MGR determined that the proposed route was the most practical in relation to well locations and the nearest collector pipeline. No other alternatives were considered because the proposed route parallels and is adjacent to existing pipeline ROWs and the proposed pipeline ROW overlaps and uses existing surface scars (pipeline construction disturbance) as much as possible.

2.4.1 No Action Alternative

The No Action alternative would be to not construct the proposed MGR pipeline. Under the No Action alternative, federal, state, and privately owned lands would not be further disturbed along the existing pipeline ROWs adjacent to the proposed pipeline route. No ROW approvals would be granted by the BLM, BOR, State of Wyoming, UD, or UPLRC. The lands adjacent to the existing pipeline ROWs would be available for other uses compatible with existing land use plans. Under the No Action alternative, there would be no adverse impacts to environmental resources resulting from the construction and installation of the proposed pipeline.

Under the No Action alternative, natural gas would continue to be transported via the existing pipelines; however, the capacity of the existing pipelines may not be sufficient to transport additional natural gas as it is produced in and around the proposed pipeline area. In the absence of regulatory approval for the proposed pipeline, alternate gas transport options are limited. Natural gas development in southwestern Wyoming may be hindered if reserves cannot be transported from the area to meet market demands. A lack of available transport for newly developed natural gas reserves may require wells to be shut in until sufficient pipeline capacity becomes available for use. Onsite storage of natural gas is not a viable option.

Under the No Action alternative, the expected beneficial impacts to the local economy would not occur.

CHAPTER 3 AFFECTED ENVIRONMENT

3.0 INTRODUCTION

This chapter includes a description of the environmental resource areas that could be affected by the construction of the proposed pipeline. This EA draws from the *Green River Resource Area RMP FEIS* and the *Environmental Assessment and Finding of No Significant Impact for the Bird Canyon-Opal Pipeline, Granger Spur Pipelines, and One Compressor Station, Sublette, Sweetwater, and Lincoln Counties, Wyoming* (BLM, 1999). The latter NEPA document examines the impacts to constructing a pipeline within and adjacent to the same ROW as the one proposed for this project. Recent changes, corresponding to the last several years, to the affected environment are noted and analyzed in this EA. Resource areas discussed in greater detail include those identified during the scoping process.

In addition to the issues of concern identified during the scoping process and described in Chapter 1, "critical elements of the human environment" of the BLM NEPA Handbook H-1790-1 were examined for their relevance to the proposed pipeline. These elements are listed in Table 3-1.

Table 3-1 Critical Elements of the Human Environment

Critical Element	Discussion Present in this EA
Air quality	yes
Areas of critical environmental concern (ACECs)	no
Cultural resources	yes
Environmental justice	yes
Farmlands (prime or unique)	no
Floodplains	yes
Native American religious concerns	yes
Threatened and endangered species	yes
Wastes, hazardous or solid	yes
Water quality	yes
Wetlands/riparian zones	yes
Wild and scenic rivers	no
Wilderness	no
Invasive/Noxious Species	yes

If an element would not apply to the proposed pipeline project, it is not discussed further in this document. The following elements would not be affected by the proposed pipeline because none exist within or near the pipeline route: ACECS, prime or unique farmlands, wild and scenic rivers, and wilderness.

Additional resources potentially affected by the proposed pipeline include the following: paleontology, soils, vegetation, wildlife and fisheries, visual resources, noise, and socio-economics. Discussions of these resource areas are included in this EA.

3.1 LANDS AND ACCESS

3.1.1 Surface Ownership

The pipeline route is located primarily within Sweetwater County with approximately one mile of the pipeline route in Sublette County. Approximately 75 percent of the land that would be crossed by the pipeline would be federal lands administered by the BLM and the BOR. Federal lands are managed in accordance with applicable laws and land use plans. The remainder of the lands crossed are owned by the State of Wyoming, UD, and UPLRC. Most of the BLM lands occur along the northern part of the pipeline route, whereas state and private lands are crossed primarily along the southern part of the pipeline route.

County governments have jurisdiction over the development of non-public lands. Sweetwater County is in the process of developing a comprehensive plan to provide the framework to guide the manner in which the county creates, administers, and enforces regulations pertaining to land use. One goal of the planning process is to "encourage growth and development … in locations that contribute to the economic and social well-being of County residents" (Sweetwater County, 2002).

3.1.2 Land Use and Grazing

Sweetwater and Sublette counties are primarily rural and are tied to traditional natural resource based industries. Agricultural and mineral extraction industries, particularly oil and gas, are principal land uses. The areas in Sweetwater County through which the pipeline would pass are zoned agricultural with some areas of minerals development, except for that part of the pipeline within the city limits of Granger. The pipeline route through Sublette County is zoned resource/conservation (BLM, 1999).

Urban development is focused in specific locations near the proposed pipeline, primarily in the communities of Granger near the southern terminus of the proposed pipeline as well as LaBarge to the west of the northern terminus. Green River and Rock Springs are the larger cities located east of the proposed pipeline.

Grazing is the primary agricultural use of the lands in the vicinity of the proposed pipeline. Arid conditions and relatively unproductive soils preclude extensive crop development. There are no irrigated croplands in the area near the pipeline route (Wyoming Water Resources Center, 2002).

Livestock grazing on BLM-managed lands is authorized under Section 3 of the Taylor Grazing Act of 1934 (BLM, 1996). The proposed pipeline would disturb portions of six grazing

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allotments, in which the total amount of disturbed area within the grazing allotments would be approximately 312 acres, corresponding to 34.1 animal unit months (AUMs) (Easley and D'Ewart, 2003). The details of the allotments are shown in Table 3-2.

Table 3-2 Grazing Allotments Potentially Affected by the Proposed Pipeline

Allotment	Size (acres)	Livestock Type	Season of Use	Pipeline ROW Acres	AUMs
Figure Four	114,425	Sheep/cattle	5/10-1/10	14.0	1.8
Eighteen-Mile	228,840	Sheep/cattle	5/1-1/31	15.5	8.2
Lombard	94,802	Sheep/cattle	5/1-1/31	17.0	3.1
Seedskadee	12,555	Horse Sheep/cattle	All year 5/1-12/31	13.0	0.8
Slate Creek	267,048	Sheep/cattle	4/15-11/30	29.0	1.3
Granger Lease	467,059	Sheep/cattle	Dec-Apr/May-Oct	223.0	15.9
Total	1,184,729			**311.5**	**31.1**

Source: Easley, Kemmerer Field Office and D'Ewart, Rock Springs Field Office, 2003

3.1.3 Roads and ROWs

A regional network of state highways and county, local, and rural roads provides the basic transportation infrastructure for access to the pipeline route. Interstate 80 is near the southern terminus of the proposed pipeline and is the main east-west travel corridor across the state. U.S. Highway 30 travels from Granger northwest to Kemmerer. State Highway 372 travels from Green River to Fontenelle, crossing the pipeline route southeast of the Fontenelle Reservoir. There are no state highways that parallel the pipeline route for its length.

Traffic in rural areas is typically characterized by low volumes, infrequent congestion, high travel speeds, and rugged terrain. Common attributes of rural roads include a mix of rural and urban travelers, secondary roads with less frequent maintenance, large variances in travel speeds and frequent passing, adverse road surface conditions, light usage, and large geographical areas that impede rapid emergency detection and response (Goehring et al., 1999).

Pipeline routes that contain multiple pipeline ROWs as the selected route and the overlapping of construction ROWs minimize impacts to the environment. The proposed pipeline would be located parallel and adjacent to existing pipelines. ROWs are issued with surface reclamation stipulations and other mitigating measures that may be modified as necessary by the authorizing agency (BLM, 2003a).

3.1.4 Recreation

BLM lands crossed by the proposed pipeline support dispersed recreation. BLM recreation facilities are not present along the pipeline route. However, the increasing usage and accompanying crowding of our nation's national parks and national forests is focusing more attention on BLM lands. BLM lands in southwestern Wyoming provide opportunities for hiking,

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camping, mountain biking, fishing, river running, sight-seeing, wildlife watching, and hang gliding (Sweetwater County Joint Travel & Tourism Board, 2002).

The Fontenelle Reservoir is located on the Green River 24 miles southeast of La Barge, Wyoming and approximately 3.3 miles at its closest point west of the proposed pipeline route. The reservoir has a surface area of 8,000 acres. The lake is 20 miles long when full and has a shoreline of about 56 miles. Recreation use is low and seasonal. Fish species include rainbow, brown, and cutthroat trout. Fontenelle Creek campground has developed campsites with restrooms and running water. The creek enters the reservoir approximately eight miles west of the pipeline route. Three other campsites are located approximately two miles west of the route below the dam and are more primitive. Stream fishing opportunities exist on the Green River above and below the reservoir (Sweetwater County Joint Travel & Tourism Board, 2002).

Seedskadee National Wildlife Refuge is located approximately one-half mile to the east of the route along the Green River. It consists of 26,300 acres of river habitat in a 35-mile square area, features more than 200 species of birds, and is a breeding ground for bald eagles, Canada geese, mallards and trumpeter swans. Hunters pursue numerous game species on the refuge, including antelope, mule deer, sage grouse, and waterfowl. The Green River also offers world-class trout fishing opportunities for anglers year round (Sweetwater County Joint Travel & Tourism Board, 2002).

Southwest Wyoming is home to over 1,600 wild horses. These horses are managed by the BLM in partnership with private landowners in five separate Wild Horse Herd Management Areas. Spring and early summer are good times to watch wild horses because of the young foals (Sweetwater County Joint Travel & Tourism Board, 2002).

The network of historic trails in the area provides a unique recreational and historic experience for mountain bikers. The Oregon Trail, California Trail, Pony Express Trial, Mormon National Historic Trail, and the Overland Stage route are all suited to mountain biking (Sweetwater County Joint Travel & Tourism Board, 2002).

3.2 PHYSIOGRAPHY AND GENERAL GEOLOGY

3.2.1 Physiography

The proposed pipeline is located within the Green River Basin, primarily a flat to gently rolling plain along the pipeline route. Slopes along the route are rated between seven and 10 by the Natural Resource Conservation Service (NRCS), indicating slopes that are generally less than five percent with limited areas displaying slopes of five to 10 percent (Hamerlinck, 2002). The topography of the northern part of the proposed pipeline route consists of a broad upland plateau on the lake-deposited, fine grained oil shale and mudstone of the Laney member of the Eocene Green River Formation. The Laney member dominates the surface geology north and slightly south of the Green River as well as south and west of the Fontenelle Reservoir. Green River Formation bluffs surround the reservoir. Most of the area south of the Green River extending to Granger is dominated on the surface by the Eocene Bridger Formation (BLM, 1999). The

Bridger is composed of olive-drab and white sandstones, claystones, and conglomerates (Langeson et al., 1988), eroding into rugged badlands with small sand dune and terrace gravel inclusions. Fractured sandstone bedrock can be found approximately 24 to 36 inches below the surface. The windblown sand deposits in the vicinity of the proposed pipeline have been stabilized with vegetation. Lands crossed by the proposed pipeline do not show evidence of major landslides (BLM, 1999).

3.2.2 Geologic Structure

The Green River Basin is one of a complex of depressions separated by uplifts and ridges and is considered to be part of the Southwestern Basins Province. The floor of the basin lies between 6,000 and 8,000 feet in elevation. The west side of the Green River Basin is bound by the Wyoming-Utah-Idaho Overthrust Belt, in which sedimentary rocks have been pushed up and over the western margin of the basin. The southern basin is bound by the Uinta Mountains, the east by the Rawlins Uplift, and the north-northeast by the Wind River Mountains. The Rock Springs Uplift lies in the central part of the basin and essentially separates it into eastern and western halves (Lageson et al., 1988).

Most of the structural features in the basin, including the modern Wind River and Uinta Uplifts, resulted from compressional deformation that occurred during the Laramide Orogeny. Although there is evidence that some pre-Laramide structural movement took place, the nature of the deformation is not well known (Law, 1995).

Gas producing areas that may utilize the proposed pipeline to transport produced hydrocarbons to market include the Jonah area and Moxa Arch area, which includes the Fontenelle area. The Moxa Arch-La Barge Platform area is a broad, deep-seated basement uplift with drape of sediments over it, resulting in large closure and large oil and gas pools. The traps are really combination structural and stratigraphic traps, because the reservoir depends on the nature of the rocks as well as the structural arching (Gibson, n.d.). Reservoirs include the Dakota Sandstone, the Frontier Formation, and the Mesaverde Group, among others (Law, 1995). The Jonah Field is a large, complicated structural trap located in the Green River Basin. A geologic cross section of the subsurface near the area of the proposed pipeline is shown in Figure 3-1.

There are no known active faults along the pipeline route (Wyoming State Geological Survey, 2000). There have been no major earthquakes recorded in historic times in the vicinity of the proposed pipeline, although the USGS estimated that a 4.2 to 4.5 magnitude earthquake might occur somewhere in the Green River Basin every 62 years (BLM, 1999). On February 3, 1995 at 8:26 a.m., a magnitude 5.4 earthquake occurred near Rock Springs. The seismic waves from this event were picked up by the seismic stations of the University of Utah to the south and stations of the USGS national seismic network (USGS, 1995). Rock Springs is approximately 33 miles east of the southern terminus of the proposed pipeline.

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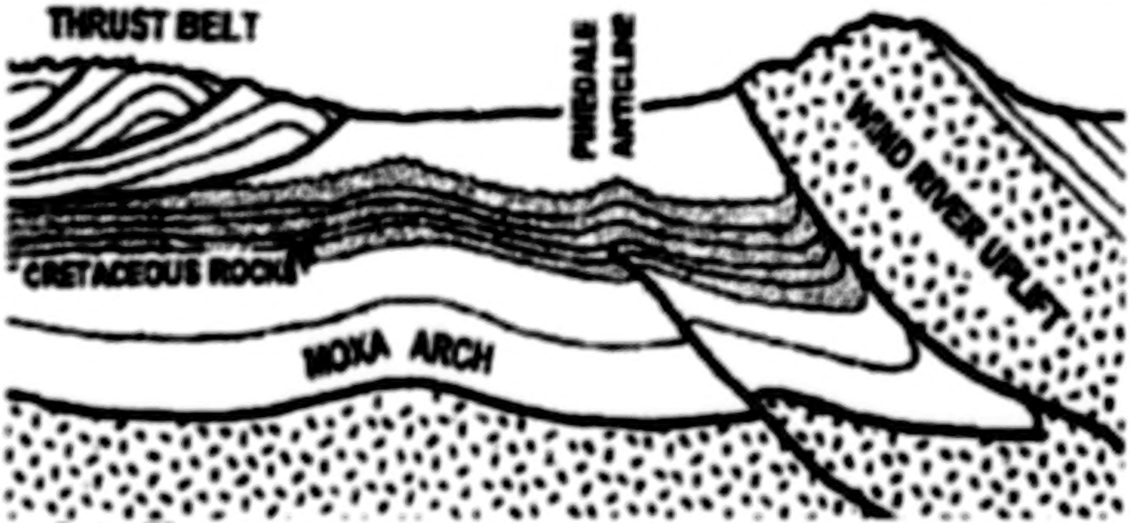
Figure 3-1 Green River Basin Generalized Geologic Cross Section



Source: Gibson

3.2.3 *Stratigraphy*

For much of Paleozoic time (Cambrian through Permian, about 570 to 240 million years ago), the Rocky Mountain region was part of a submarine continental shelf on the western flank of North America. The quiet, shallow seas collected fine sediments that later became shales and limestones. To the west, a rapidly rising western upland shed off sediments into the Green River Basin. Sediments were carried eastward by complex braided streams toward a shallow sea in the Great Plains. Most of the hydrocarbon bearing reservoirs are sandstones of the Cretaceous Age. Fluctuating shorelines, reflecting transgression and regression of the eastern sea produced the sandstone deposits of the Frontier Formation. Fluvial systems continued to develop within the basin and formed the Mesaverde Group with the Almond Sandstone at the top. Marginal marine environments later produced the Lewis, Lance, and Fox Hills formations. The total sediment thickness is as much as 32,000 feet in the northern Green River Basin (Gibson, n.d.). Figure 3-2 displays a stratigraphic column showing the ages and depositional sequence of Cretaceous and younger formations in the Green River Basin.

3.2.4 *Minerals*

3.2.4.1 Oil and Gas

Although hydrocarbons began to be produced early in the 1920s, most of the development occurred in the 1970s and 1980s and continues today. About 6,000 billion cubic feet (Bcf) of gas has been produced from Cretaceous beds in the greater Green River Basin, while only 1,600 Bcf has come from all other formations combined. The basin contains more than 100 fields with more than one million barrels of oil equivalent. In the Green River Basin itself, the most prolific production comes from the La Barge Platform (including Big Piney Field), which has produced

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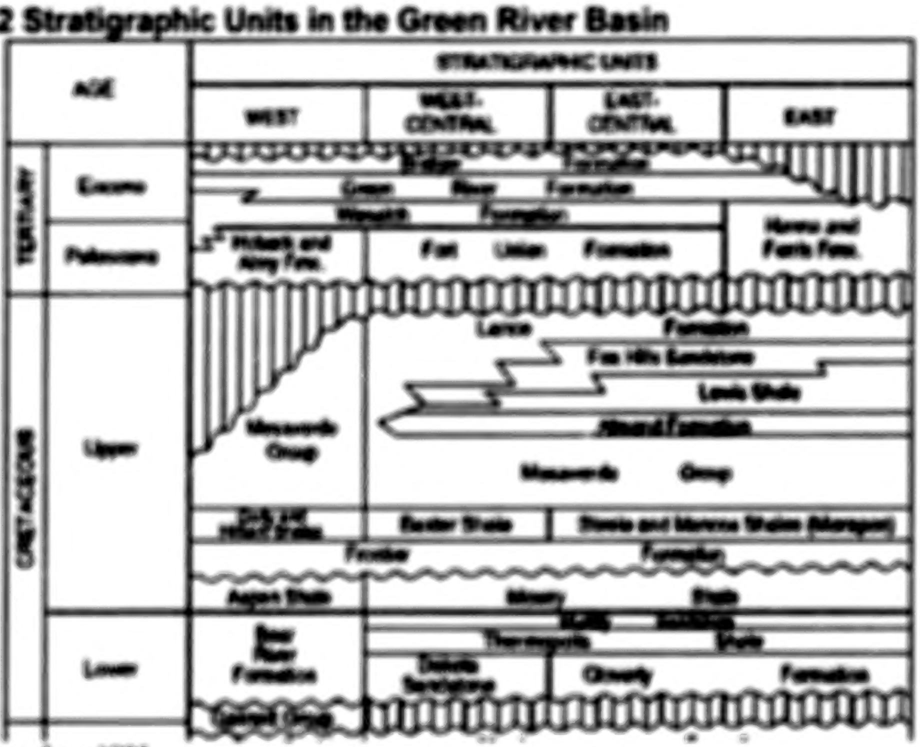
more than 80 million barrels of oil and has an estimated ultimate recovery of more than two trillion cubic feet (Tcf) of gas (Gibson, n.d.).

Figure 3-2 Stratigraphic Units in the Green River Basin



Source: Law 1995

Of the fields that would have access to the proposed pipeline, Moxa Arch fields are estimated to contain more than one Tcf of gas (estimated ultimate recovery) in the Frontier Formation and other strata. Other deep basin-centered tight gas plays produce from the coal and carbonaceous shales of the Cretaceous Cloverly, Frontier, and Mowry formations. Similar sandstone reservoirs exist in both the Cloverly and Frontier formations. The play extends to the Mesaverde group, where it is focused on the Almond Formation (Gibson, n.d.).

The Jonah Field produces gas and condensate from innumerable late Cretaceous and early Tertiary fluvial sandstone bodies at 7,300 feet to 12,800 feet. The Jonah Field is currently producing over 175 MMCFG/D from over-pressured fluvial channel sandstones of the Upper Cretaceous Lance Formation. Gas production originates from multiple layers that compose a column as great as 4,000 feet thick (Hanson et al., 2002). The field was discovered in 1975 (Robinson, 1998).

In 2002, the U.S. Geological Survey (USGS) used a geology-based assessment methodology to estimate the remaining undiscovered natural gas and oil in the Southwestern Wyoming Province. The Southwestern Wyoming Province includes the Green River Basin, Moxa Arch, and the entire area in and around the proposed pipeline. The USGS estimated an average 84.6 Tcf of gas, 131 million barrels of oil, and 2.6 million barrels of natural gas liquids remain in the reservoirs evaluated in the study (USGS, 2002).

3.2.4.2 Salable Minerals

Salable minerals include sand, grave, topsoil, boulders, riprap, sandstone, shale, limestone, and borrow material. Sand, gravel, and fill material are used by the Wyoming Department of Transportation, other agencies, and local contractors. Gravel deposits occur near the Green and Blacks Fork rivers(BLM, 1996). There are no sources of salable minerals within the proposed pipeline route.

3.2.4.3 Locatable Minerals

Although mining claims exist throughout the basin, there are no claims along the route of the proposed pipeline.

Wyoming has the world's largest deposit of trona, and supplies about 90 percent of the nation's soda ash (Wyoming Rails, 2001). Trona, hydrated sodium bicarbonate carbonate, is a water-bearing compound that can be processed into soda ash or bicarbonate of soda for use in the manufacture of glass, soap, baking soda, and toothpaste. Wyoming's trona industry produced over 16.7 million tons, employing 3,085 mine and processing plant workers in 1999. All Wyoming trona is mined underground, with most of it being in the area of Green River. Although trona mining may cause subsidence in the vicinity of the mine, there are no trona mine shafts within one mile of the route of the proposed pipeline (BLM, 1999).

3.2.4.4 Paleontology

Both the Laney member of the Green River Formation and the Bridger Formation have been recognized for the presence of significant fossil remains (Dames & Moore, 1992 and EVG, 1999). During the Eocene, this region was located at much the same latitude it is today, but the climate was moist temperate or sub-tropical. A series of large inland lakes extended across the region, and it is in the bottoms of these lakes that various plants and animals were buried and fossilized. These lakes later dried up as the local climate changed, and many of the plants and animals living there became extinct (Brenes et al., 1998).

Vertebrate fossils in the Green River Formation can include fish, reptiles, birds, and mammals. Invertebrate fossils are abundant, with remnants of snails and insects being common. Plant fossils, including many reeds, leaves and wood specimens, are also very prevalent. A large majority of known fossils are fragmentary but some complete skeletons exist of fish, birds, reptiles, and mammals (Brenes et al., 1998).

The Bridger Formation has been explored for paleontological purposes since the late 1800s and is known for the presence of land mammals. Historically, it is notable as the disputed territory of the Marsh and Cope "bone wars" in which the two prominent rival paleontologists fought bitterly over access to important fossil mammal localities. The Bridger Formation is important because of its abundance of early primate fossils (Orr, 2003). Turtles were also an important part of the fossil fauna of the formation. Because of their durable shells, turtles are more likely than many other animals to be preserved as fossils and subsequently discovered by fossil hunters (Joseph Leidy Online Exhibit, 2003).

Literature reviews and preconstruction field and open trench field monitoring in this multi-pipeline, adjacent ROW route between Bird Canyon Compressor Station and the Granger Plant have been conducted on several occasions since 1998 (EVG, 1999, 2001, 2001a, 2002, and 2002a). These reports have confirmed the presence of vertebrate fossils in the surface lithology along the existing pipeline ROWs and the proposed route for the underground pipeline.

Based on these previous surveys, the following areas that would be crossed by the proposed pipeline have a high potential for encountering vertebrate fossil material in the Bridger Formation (Lower Bridger or Bridger A):

- Sections 9, 28, 33, and 34, T23N/R111W;
- Section 36, T22N/R111W, Section 12, T21N/R111W, Section 26, T21N/R111W, and Section 4, T20N/R111W; and
- Section 16, T22N/R111W and Section 4, T19N/R111W.

The locations in Section 36, T22N/R111W and Section 12, T21N/R111W include three University of California Museum of Paleontology vertebrate fossil localities that produce scientifically significant fossil turtles and fish.

3.3 SOILS

Soils in Wyoming are closely related to geologic parent materials and vegetation communities because of the state's harsh climate (Munn et al., 1998). The Laney member of the Green River Formation and the Bridger Formation dominate the surface rock. These high clay-content parent materials produced a complex of aridic soils, or Aridisols, that characterize the area. The majority of the soils in the area of the pipeline route range from very shallow to moderately deep, formed on rolling upland plains dissected by rock ravines, short escarpments, and draws (BLM, 1996). The proposed pipeline would disturb approximately 478 acres of soils.

Soils are characterized by moisture and temperature. Typical soils in the area of the proposed pipeline are, as stated, aridic and frigid. The amount and seasonal incidence of water entering the soil, percolating through, or held and used by plants is one of the controlling factors in soil formation. The amount and occurrence of moisture is generally related to climate. Precipitation averages from seven to nine inches, although the northern terminus of the pipeline may receive slightly more. Aridic soils are dry more than half the time when they are warm enough for plant growth. They are too dry to support annual crop growth and may require irrigation to support them. Frigid soils can be described as "cool," with a mean annual soil temperature below 47° F but above 32° F (Munn et al., 1998).

The characteristics of Aridisols result from the receipt of little moisture. In general, they are dry, light-colored, alkaline soils. Aridisols exhibit:

- Less weathering and leaching, resulting in coarse textures, shallow depths, less retention of soluble substances, and slow soil formation;
- Large areas of bedrock and coarse weathered mantle;
- Great expanses of patinated surfaces (desert varnish);
- Low erosion rates, permitting the survival of very old soils;
- Abrupt soil boundaries resulting from changes in slope, drainage, and the presence of windblown sands and organic material; and
- Lower thresholds to degradation processes than humid soils (University of Arizona, 2001).

Some Aridisols develop on layers of clay and may be sodium-affected. Other Aridisols may exhibit varying accumulations of calcium carbonate or more soluble salts (Munn et al., 1998). Moderately saline soils are found along the Green and Blacks Fork rivers' drainages (BLM, 1996).

Vegetative cover can prevent erosion of the soils in the proposed pipeline area. The presence of vegetation is the most important factor influencing runoff and sediment yield (BLM, 1996). Salinity and salt toxicity, management of expansive soils, irrigation management of sandy soils, blowing sand and wind erosion, and overgrazing resulting in erosion are among the range and agricultural management problems associated with aridic soils (University of Arizona, 2001).

Soil mapping for Sweetwater and Sublette counties is not currently available from the NRCS (NRCS, 2003). The 1996 Green River Basin EIS included a general soils map that includes lands crossed by the proposed pipeline route. None of the soils identified along the proposed route is considered unstable or erosive (BLM, 1996).

Soils consisting of the following soil types are found from the northern terminus in Section 34, T27N/R111W to Section 3, T22N/R111W: Teagulf, Huguston, Haterton, Wint, Tasselman, Seedskadee, Leckman, and Kandaly. These soils are moderately deep to very shallow, well drained soils formed on rolling upland plains, rock ravines, short escarpments, and draws (BLM, 1992). The Kandaly component is a sandy soil that is susceptible to wind erosion. The route of the northern section of the proposed pipeline is characterized by rolling terrain of gradually decreasing elevation, ranging from approximately 7,300 to 6,400 feet in the southern part as it enters the Green River floodplain. The topography exhibits interspersed areas of soils, sandstone gravel, and sandstone outcrops where there are breaks in the slope. Fractured sandstone bedrock is found approximately 24 to 36 inches below the surface. The soil tends to be coarse and contain hard clasts of the local bedrock. Coarse textured sandy soils result from the decomposition of rocks and gravels to finer particles (BLM, 1999).

In the area surrounding the Green River crossing, soil types include Cambarge, Pepal, Huguston, and Leckman. These soils are deep, well drained, gravely sandy loam and fine sandy loam soils. They are formed on nearly level or sloping stream terrances or alluvial fans (BLM, 1992). The Green River floodplain begins along the route in Section 9, T23N/R111W. The soil on the north side of the river is approximately 12 inches thick and lacks clasts near the surface. The south side of the river is characterized by carbonate-rich, uncemented soils containing gravels within 12 inches of the surface. These soils form alluvial fans along the floodplain (BLM, 1999).

Soils generally consist of the following types south of the Green River from Section 3, T22N/R111W to Section 16, T18N/R111W: Kandaly, Westvaco, Haterton, Teagulf, and Huguston. These soils are characterized by deep sand dunes intermingled with moderately deep to very shallow, well drained, strongly alkaline soils formed on rolling upland plains and fans. Included in this unit are some areas of badlands (BLM, 1992). The route of the southern section of the proposed pipeline is characterized by gradually decreasing elevation, approximately 6,500 to 6,400 feet, exhibiting small amounts of topographic relief especially at drainages. Ridges are characterized by outcrops of bedrock and shallow soils. Slopes occurring near creeks and drainages exhibit shallow soils that are susceptible to erosion, either from water flow or from tracks created by vehicular traffic. Shallow, rocky soils can exhibit medium to rapid runoff, with a moderate water erosion hazard. Scattered sand dunes, where present, are surrounded by clayey, alkaline soils (BLM, 1999). Alkaline soils can be characterized by slow permeability, rapid runoff and moderate to severe water erosion hazard. Alkaline soils are difficult to reclaim. Sand dunes can be deep and are well drained. Permeability is rapid and water capacity is low. Water erosion in sand dunes is not a hazard, but wind erosion can present a severe hazard (BLM, 2003a).

Several areas where soil integrity could be compromised by development were identified in the 1999 *Environmental Assessment for the Bird Canyon-Opal Pipeline, Granger Spur Pipelines, and One Compressor Station, Sublette, Sweetwater, and Lincoln Counties, Wyoming*. The area on either side of Shute Creek was identified as a riparian area in that document; however, this area is currently dry due to the drought conditions occurring over the last several years (Fabian and Gayer, 2003). Sand dunes occurred along the route on the south side of the creek and showed evidence of wind erosion where the dunes lacked vegetation. Vegetation is at risk by sand blasting if strong winds occur shortly after seeds germinate. The route between Sections 4 and 21, T20N/R111W, parallels an incised drainage that becomes Seven Mile Gulch and adjacent sand dunes. The gully erosion was accelerated due to runoff within the existing pipeline ROWs (BLM, 1999).

3.4 WATER RESOURCES

3.4.1 Surface Water

The major hydrologic drainages crossed by the proposed pipeline route are the Green River and Blacks Fork River. The Green River flows south through Sweetwater County and is the largest tributary in the Colorado River Basin. The Blacks Fork River is a tributary to the Green River. Both rivers have a designated use classification of Class 2AB, meaning that the waters are protected for drinking water, game and non-game fish, fish consumption, other aquatic life, recreation, wildlife, agriculture, industry, and scenic value. Both rivers are included on the Wyoming Section 303(d) list of impaired waters. The State of Wyoming has yet to make a scientifically defensible determination of impairment for the Green River. The Blacks Fork River was listed as impaired for contact recreation in the year 2000 (DiRienzo, 2003).

Other surface water resources in the vicinity of the proposed pipeline include intermittent, ephemeral, and perennial streams; livestock ponds; seeps; and springs (BLM, 1999). There were no potential wetlands identified by field personnel conducting vegetative and animal species surveys in 2002 along the proposed pipeline route except in the immediate vicinity of the Green and Blacks Fork rivers. Areas along ephemeral drainages previously identified as showing wetland or riparian characteristics (BLM, 1999) were dry and showed no evidence of water (Fabian and Gayer, 2003).

Stream channel stability varies from fair to poor. Although roads are responsible for up to 90 percent of the sedimentation occurring within the Green River Basin, pipelines that are not revegetated can also cause sedimentation in surface waters. Surface disturbance can cause channeling and the transportation of salts and sediment. Locating pipelines in intermittent and ephemeral drainages can exacerbate the formation of gullies and transport of sediment (BLM, 1996).

Surface water in the Green River Basin is used for agricultural purposes, municipal and domestic use, industrial use, recreational use, and environmental use. Environmental uses include the management of reservoirs, management of species such as the cutthroat trout, wildlife consumption, and maintenance of wildlife refuges (States West, 2001).

The State of Wyoming has primacy over the Clean Water Act (CWA) within the state. The CWA requires federal agencies to comply with requirements regarding the discharge of pollutants into surface water bodies. Section 402(p) requires states to issue permits for stormwater discharges associated with industrial activity, which includes construction activities that could disturb one or more acres. Section 404 regulates the discharge of dredged or fill material into the navigable waters at specified disposal sites, including wetlands.

The pipeline route would cross the floodplains of the Green and Blacks Fork rivers. Floodplains are protected by Executive Order 11988 *Floodplain Management*. It directs federal agencies to establish procedures to ensure that federal actions undertaken in a floodplain consider the potential effects of flood hazards and floodplain management while avoiding floodplain impacts to the extent practicable.

3.4.2 Ground Water

Ground water beneath the proposed pipeline route is found relatively deep in Cretaceous-aged sandstones and shales. Ground water in the southernmost section of the proposed pipeline route (approximately southernmost 15 miles) can be found within 20 to 50 feet of the surface. Ground water along the remainder of the route ranges from 50 to 200 feet below the surface. Shallow ground water can be found, however, in the Quaternary sand deposits that can be found throughout the northern part of Sweetwater County. Along the Blacks Fork and Green rivers, shallow ground water is found in the mixed soils and terraces in the alluvial basins.

Groundwater vulnerability to environmental contaminants is low to medium except along the river drainages (Hamerlinck et al., 1998).

Water wells have been drilled in the vicinity of the proposed pipeline, primarily in the area surrounding Granger. Approximately 14 percent of the wells drilled in Sweetwater County are used for domestic purposes. Most of the county's drinking water wells are drilled into alluvial aquifers bounding Bitter Creek between the cities of Green River and Rock Springs, well east of the southern terminus of the proposed pipeline. The average well depth in Sweetwater County is 385 feet (Hamerlinck et al., 1998).

Ground water in the Green River Basin is used for agricultural use, municipal and domestic use, and industrial use (States West, 2001).

3.5 VEGETATION, RIPARIAN AREAS, WETLANDS

3.5.1 Native Vegetation

Vegetative communities in the Green River Basin consist of grasses to grass-shrub to forests, including sagebrush-wheatgrass, saltbush-greasewood, and wheatgrass-needlegrass shrubsteppe (USFS, n.d.). Vegetation in the vicinity of the proposed pipeline is dominated by species that require little water and can exist on aridic soils. Predominant vegetation growing on the upland pipeline route consists of sagebrush, rabbitbrush, saltbrush, and greasewood. Thickspike wheatgrass, needle-and-thread grass, Sandberg blue grass, snakeweed, and cushion plant communities exist in the understory (BLM, 1999).

Vegetation in the vicinity of the proposed pipeline can be important as a forage base for livestock, antelope, and wild horses; however, shallow soils and arid conditions limit vegetative production (BLM, 1996). The amount of vegetative cover partially determines the amount of precipitation infiltration. Vegetation impedes runoff and increases temporary surface storage, increasing the infiltration of rainfall.

3.5.2 Non-Native and Invasive Species

Noxious weeds are plants designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property. They are plants that are competitive, persistent, and pernicious. They are also often non-native. Invasive species are plants introduced into an environment with no natural enemies, such as insects or other plants, to limit their reproduction and spread. They frequently dominate native vegetal species if left unchecked. Field surveys conducted in 2002 revealed no noxious weed establishment in undisturbed portions of the existing and proposed pipeline ROWs (Fabian and Gayer, 2003).

Newly disturbed portions of multiple pipeline routes between the Bird Canyon Compressor Station and the Granger Plant are susceptible to infestations of invasive/noxious weeds such as Canada thistle, musk thistle, and black henbane. Monitoring for weed infestations and spraying for two consecutive seasons, after emergence but before seeding, has been an effective method of controlling these species.

3.5.3 Riparian Areas and Wetlands

Riparian areas exist along the two perennial waters located along the pipeline route. Riparian areas along the Green River support cottonwoods and willows. The Blacks Fork supports willow, hawthorn, low shrubs, and lowland grasses at the pipeline crossing (BLM, 1999). Riparian communities are used for food, nesting habitat, and cover for many domestic and wild animal species.

Wetlands in the Green River Basin provide habitat for nesting and breeding ducks and geese. Local birds are the primary target for hunters. The Seedskadee National Wildlife Refuge to the east of the proposed pipeline is heavily hunted for waterfowl.

Wetlands are protected under Executive Order 11990 *Protection of Wetlands*, which directs federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

Formal wetlands delineations were not performed in association with this EA. There were no potential wetlands identified by field personnel conducting vegetative and animal species surveys in 2002 along the proposed pipeline route except in the immediate vicinity of the Green and Blacks Fork rivers. Areas along ephemeral drainages previously identified as showing wetland or riparian characteristics (BLM, 1999) were dry and showed no evidence of water (Fabian and Gayer, 2003).

Palustrine wetlands are nontidal wetlands dominated by trees, shrubs, and persistent emergent vegetation, and the salinity due to ocean-derived salts is less than 0.5 percent. A wetland can also be palustrine if it lacks such vegetation but is less than 20 acres in size, lacks bedrock shoreline features, is less than two meters deep, and the salinity due to ocean-derived salts is less than 0.5 percent. Emergent wetlands maintain the same appearance over a period of years because of relatively stable climatic conditions (Tyrrell, 2001).

National Wetlands Inventory maps identify wetlands to the east of the route's Green River crossing (BLM, 1999). The Green River Basin Water Plan identifies large areas in the general location of the pipeline route as possibly containing emergent, palustrine wetlands, specifically along the Green and Blacks Fork rivers. The proposed pipeline route crosses or would come close to 11 riparian/wetland areas. Based on the National Wildlife Federation National Wetland Inventory maps, these locations are as follows.

Table 3-3 Possible Riparian Areas and Wetlands Located Near Pipeline Route

Location	Stream	Wetland Type
SE NW, S28, T19 N, R111W	Blacks Fork River	R2UBG, PEMC
SW NE, S21, T19 N, R111W	Tributary to Black's Fork Green River	R4SBA
SW NE, S28, T20 N, R111W	Seventeen Mile Gulch	R4SBA, PEMC
S4 & S9, T20 N, R111W	Tributary to Seventeen Mile Wash	R4SBA
SE, SE, S26, T22N, R111W	South Fork Shute Creek	R4SBC
NE, SW, S10, T22N, R111W	Shute Creek	R4SBF
Center S3, T22N, R111W	Isolated wetlands	PUSA
SW S16, T23N, R111W	Green River	PEMC, R2UBH
NE, S3, T23N, R111W	Tributary to Four Mile Gulch	PUBFx, R4SBA
SE, S22, T25N, R111W	Draw south of Little Colorado Well #5	R4SBA
SE S16, T26N, R111W	West Fork Buckhorn Canyon	R4SBA

Table 3-4 Explanation of Wetland Types

Wetland Type	Description
R4SBA	Riverine (river), Intermittent Stream bed, Temporarily Flooded
PEMC	Palustrine (pond), Emergent, Seasonally Flooded
R2UBG	Riverine, Lower perennial, Unconsolidated bottom, intermittently exposed
R4SBC	Riverine, Intermittent Stream bed, Seasonally Flooded
R4SBF	Riverine, Intermittent Stream bed, Semi-permanently Flooded
PUSA	Palustrine, Unconsolidated shore, Temporarily Flooded
R2UBH	Riverine, Lower perennial, Unconsolidated bottom, Permanently Flooded
PUBFx	Palustrine, Unconsolidated bottom Semi-permanently Flooded, Excavated

3.6 WILDLIFE AND FISHERIES

The information in this section includes the results of the surveys conducted in association with the MGR Rendezvous Phase IV Pipeline from Bird Canyon to Granger (O&G, 2003). Surveys for listed threatened and endangered (T&E) as well as sensitive and other special status species were conducted during spring and fall of 2002 and in April, 2003 to determine the current status of wildlife species and their habitats crossed by the proposed pipeline route. Results of these recent surveys are addressed in the following text, as appropriate.

3.6.1 Big Game

Wyoming Game and Fish Department manages four big game species in the vicinity of the proposed pipeline routes. Pronghorn antelope, mule deer, elk and moose are managed in major herd units. Maps showing seasonal ranges for these species are located in Appendix C.

Pronghorn antelope habitat for the Sublette and Carter Lease herds is crossed by the existing pipeline ROWs as well as the proposed pipeline route. The pipeline route would cross crucial winter and year-long ranges of the Sublette and Carter Lease herds north and south of the Green River and at the southern terminus near Granger, respectively.

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Three herds of mule deer occur within the proposed pipeline route. The Sublette, Steamboat, and Wyoming Range herds' migration routes and winter and year-long ranges would be crossed by the pipeline. No crucial winter range occurs along the route. A map showing seasonal mule deer range is located in Appendix C.

Two elk herds inhabit areas along the proposed pipeline route. Elk from the Pinedale herd would be unaffected by construction of this project due to the large amount of available habitat in surrounding areas. Approximately 20 acres of severe winter relief range for elk from the West Green River herd lies within the proposed pipeline construction ROW. A map showing seasonal moose ranges along the pipeline route is located in Appendix C.

Two herds of moose inhabit areas along the proposed pipeline route. The Sublette and Lincoln moose herds have winter and year-long ranges along the Green and Blacks Fork rivers; however, crucial moose winter range is not present in the proposed pipeline ROW (BLM, 1999).

3.6.2 Raptors

Many common raptor species are known to nest in the general vicinity of the proposed pipeline route. These species include golden eagle, red-tailed hawk, ferruginous hawk, great horned owl, bald eagle, Swainson's hawk, northern harrier, prairie falcon, American kestrel, merlin, and osprey. Sharp-shinned hawk, Cooper's hawk, northern goshawk, burrowing owl, and long-eared owl may also be present in the area during the summer months. Birds that may winter in the area include golden eagle, red-tailed hawk, rough-legged hawk and great horned owl as well as other less common species (Call, 1978).

Many nesting sites were identified during the 2002/2003 surveys. Nest conditions ranged from remnants to recently active. During the April, 2003 surveys, three sites were identified as occupied . One bald eagle nest was identified on an island on the Green River within one mile of the proposed pipeline crossing. Another occupied raptor nest was located near the proposed crossing location of the Blacks Fork River. A pair of Swainson's hawks was also observed in the area. The third active nest was occupied by a single golden eagle at the time of the survey. This nest was located near milepost 11.5, approximately 0.25 mile east of the proposed pipeline. Maps showing the locations of raptor nests are located in Appendix C.

3.6.3 Upland Game Birds

Upland game bird species were observed during the 2002/2003 surveys in Sweetwater County and are likely to occur in the vicinity of the proposed pipeline. These species may include sage grouse, ruffed grouse, blue grouse, partridge, pheasant and mourning dove. Several of these species were observed in or near the proposed pipeline ROW; however, no breeding or nesting sites or critical habitat areas were identified within or near the proposed ROW, with the exception of sage grouse (WNDD, 2003).

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3.6.3.1 Sage Grouse

The sage grouse is an upland game bird that is considered a sensitive species in Wyoming. Sage grouse leks have been identified within two miles of the proposed pipeline route. Sage grouse leks within and near the existing pipeline ROWs and proposed route have been identified by BLM. They occur in Section 34, T22N/R112W and Sections 10 and 15, T25N/R111W (Dunder, 2003). Mr. Jim Dunder with the BLM has recently identified the presence of a lek located in Section 34, T27N/R111W near the Bird Canyon Compressor Station. Any sagebrush habitat within two miles of a lek is considered potential nesting habitat. The time period stipulated for the preclusion of construction activities within 0.25 mile of a sage grouse lek (strutting sites) is February 1 to May 15. The time period stipulated for the preclusion of construction within two miles of a lek (nesting area) is April 1 to July 1. Maps with locations of sage grouse leks in relation to the proposed pipeline can be found in Appendix C.

3.6.4 Wild Horses

The Little Colorado Desert Wild Horse Herd Management area overlaps with approximately 23 miles of the proposed pipeline route. These horses are managed as an important part of the natural system under the multiple-use concept. Since 1971, with the inception of the *Wild Free-Roaming Horses and Burro Act of 1971*, the capture or harassment of wild free-roaming horses and burros on BLM lands is illegal (Dunder, 2003).

3.6.5 Other Wildlife

Many other small mammals, birds, and reptiles occur in the vicinity of the proposed pipeline. These species are typically preyed upon by raptors and mammalian predators within the area (WYNDD, 2003).

3.6.6 Fisheries

The Green River below the Fontenelle Dam supports brown, rainbow, and cutthroat trout. Kokanee salmon spawn in October downstream of the dam. The river is classified as a Class 2 trout fishery, which is a fishery of statewide importance. The Blacks Fork is classified as a Class 4 trout fishery. It is a fishery of local importance but normally incapable of supporting pressure from substantial fishing (WGFD, 1991).

3.7 THREATENED AND ENDANGERED AND SPECIAL STATUS SPECIES

According to the BLM Manual Section 6840, species that are listed as candidates for T&E protection are protected from actions authorized, funded, or carried out by the BLM that would contribute to the need to list these species as T&E. Federally listed T&E species and their critical habitat are also protected by the Endangered Species Act of 1973.

Information provided by the U.S. Fish and Wildlife Service (USFWS, 2003) indicated that four T&E and proposed species have been identified as potentially occurring in the vicinity of the proposed pipeline. These species include the bald eagle (*Haliaeetus leucocephalus*), black-footed ferret (*Mustela nigripes*), grizzly bear (*Ursus arctos horribilis), gray wolf (canis lupus)(*experimental*)*, mountain plover (*Charadrius montanus*), and Ute ladies'-tresses orchid (*Spiranthes diluvialis*). In addition, peregrine falcons (*Falco peregrinus)* and four species of fish are listed (bonytail chub, humpback chub, Colorado squawfish, and razorback sucker). Table 3-5 lists animal species of concern potentially occurring in the vicinity of the proposed pipeline route. Table 3-6 lists potentially occurring plants of concern.

Table 3-5 Animal Species of Concern Potentially Occurring in the Vicinity of the Proposed Pipeline Route

Scientific Name	Common Name	Federal Status	Management Status[1]	State Rank[2]	WGFD Status[3]
Birds					
Charadrus montanus	Mountain plover	Proposed			
Haliaeetus leucocephalus	Bald eagle	Threatened		S2B, S3N	SSC2
Falco peregrinus	Peregrine falcon		BLM Sensitive RSFO, KFO	S1B	S2N
Botaurus lentiginosus	American bittern			S3B, SZN	SSC3
Ardea herodias	Great blue heron			S3B, SZN	
Pandion haliaetus	Osprey			S3B, SZN	
Falco columbarius	Merlin			S2B, SZN	SSC3
Thryomanes Lewickii	Bewick's wren			SBS4	
Athene cunicularia	Burrowing owl		BLM Sensitive RSFO, KFO	S4B	SSC4
Plegadis chihi	Ibis, white-faced		BLM Sensitive RSFO, KFO	S1B	SZN
Cygnus buccinator	Trumpeter swan		BLM Sensitive RSFO, KFO	S1B	S2N
Accipiter gentiles	Northern goshawk		BLM Sensitive RSFO, KFO	S23B	S4N
Buteo regalis	Ferruginous hawk		BLM Sensitive RSFO, KFO	S3B	S3N
Centrocercus urophasianus	Sage grouse, greater		BLM Sensitive RSFO, KFO	S3	
Numenius americanus	Curlew, long-billed		BLM Sensitive RSFO, KFO	S3B	SZN
Coccyzus americanus	Cuckoo, yellow billed		BLM Sensitive RSFO, KFO	S2B	SZN
Oreoscoptes montanus	Sage thrasher		BLM Sensitive	S3B	SZN

Scientific Name	Common Name	Federal Status	Management Status[1]	State Rank[2]	WGFD Status[3]
			RSFO, KFO		
Lanius ludovicianus	Loggerhead shrike		BLM Sensitive RSFO, KFO	S4B	SZN
Spizella breweri	Brewers sparrow		BLM Sensitive RSFO, KFO	S3B	SZN
Amphispiza belli	Sage sparrow		BLM Sensitive RSFO, KFO	S3B	SZN
Fish					
Gila elegans	Bonytail	Endangered			
Ptychocheilus lucius	Colorado pikeminnow	Endangered			
Gila cypha	Humpback chub	Endangered			
Xyrauchen texanus	Razorback sucker	Endangered			
Oncorhynchus clarki pleuriticus	Colorado River cutthroat trout		BLM Sensitive RSFO, KFO	S2	NSS2
Gila robusta	Roundtail chub		BLM Sensitive RSFO, KFO	S2	NSS1
Gila coperi	Leatherside chub		BLM Sensitive RSFO, KFO	S2	NSS1
Oncorhynchus clarki utah	Trout, Bonneville cutthroat		BLM Sensitive KFO	S1S2	NSS2
Oncorhynchus clarki spp	Trout, fine-spotted Snake River cutthroat		BLM Sensitive KFO	S1	NSS4
Catostomus discobolus	Bluehead sucker		BLM Sensitive RSFO, KFO	S2S3	NSS1
Catostomus latipinnis	Flannelmouth sucker		BLM Sensitive RSFO, KFO	S3	NSS1
Amphibians					
Rana pipiens	Northern leopard frog		BLM Sensitive RSFO, KFO	S3	NSS3
Spea intermontana	Great basin spadefoot		BLM Sensitive RSFO, KFO	S4	NSS4
Bufo boreas boreas	Boreal toad		BLM Sensitive RSFO, KFO	S2	NSS2
Rannus pretiosa	Spotted frog		BLM Sensitive RSFO, KFO	S2S3	NSS4
Reptiles					
Crotalus viridis concolor	Midget faded rattlesnake		BLM Sensitive RSFO	S1S2	
Mammals					
Mustela nigripes	Black-footed ferret	Endangered			
Ursus arctos horribilis	Grizzly bear	Threatened			
Lynx canadensis	Canada lynx	Threatened			
Canis lupus	Gray wolf	Experimental			
Brachylagus idahoensis	Pygmy rabbit		BLM Sensitive RSFO, KFO	S2	SSC3
Myotis evotis	Long-eared myotis		BLM Sensitive RSFO, KFO	S1B	S1N
Myotis thysanodes	Fringed myotis		BLM Sensitive RSFO	S1B	S1N

Scientific Name	Common Name	Federal Status	Management Status[1]	State Rank[2]	WGFD Status[3]
Euderma maculatum	Spotted bat		BLM Sensitive RSFO	S1B	SZN
Corynorhinus townsendii	Townsend's big-eared bat		BLM Sensitive RSFO	S1B	S2N
Cynomis leucurus	White-tailed prairie dog		BLM Sensitive RSFO, KFO	S2S3	NSS3
Thomomys clusius	Wyoming pocket gopher		BLM Sensitive RSFO	S1S2	NSS4
Thomomys idahoensis	Idaho pocket gopher		BLM Sensitive RSFO, KFO	S2	NSS3
Vulpes velox	Swift fox		BLM Sensitive RSFO	S2A3	

Source: Long, 1998; WYNDD, 1998

[1]Management Status: S-USFS R2 or R4 = Sensitive, USFS Region 2 or 4, respectively.

[2]State Rank: Assigned by WYNDD and reflects status of species within political borders of the State of Wyoming:

S1 = Extremely rare, S2 = Very rare, S3 = Rare, S4 = Apparently secure, but may be rare in portions of its range, S5 = Secure under present conditions. "B" following state rank indicates breeding status; "N" indicates non-breeding status.

SA = Accidental in state, Wyoming not considered normal range for the species; SZN = not of significant status when migrating through the state, includes uncommon migrants.

[3]WGFD Status = Wyoming Game and Fish Department Status:

SSC = Species of Special Concern

SSC1 = Species with ongoing significant habitat loss, populations greatly restricted or declining, and extirpation appears possible.

SSC2 = Species 1) whose habitat is limited or vulnerable, but no recent or significant loss has occurred and populations are greatly restricted or declining; or 2) with ongoing significant loss of habitat and populations are declining or restricted in numbers and distribution, but extirpation is not imminent.

SSC3 = Species in which 1) habitat is not limited, but populations are greatly restricted or declining and extirpation appears possible; 2) habitat is limited or vulnerable, although no significant recent loss has occurred and populations are declining or restricted in numbers or distribution, but extirpation is not imminent; or 3) significant habitat loss is ongoing, but the species is widely distributed and population trends are thought to be stable.

Table 3-6 Plant Species of Concern Potentially Occurring Along the Proposed Pipeline Route

Scientific Name	Common Name	Federal Status	Management Status[1]	State Rank[2]
Spiranthes diluvialis	Ute ladies' tresses	Threatened		
Antennaria arcuata	Meadow pussytoes		BLM Sensitive RSFO	S2
Arabis pusilla	Small rock cress		BLM Sensitive RSFO	S1
Artemesia biennis var. diffusa	Mystery wormwood		BLM Sensitive RSFO	S1
Astragalus nelsonianus	Nelsons's milkvetch		BLM Sensitive RSFO	S2
Astragalus proimanthus	Preconcious mildvetch		BLM Sensitive RSFO	S1
Astragalus racemosus var treleasei	Trelease's racemose milkvetch		BLM Sensitive KFO	S1
Cirsium aridum	Cedar rim thistle		BLM Sensitive RSFO	S2
Cirsium ownbeyi	Ownbey's thistle		BLM Sensitive	S2

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Scientific Name	Common Name	Federal Status	Management Status[1]	State Rank[2]
			RSFO	
Descurainia torulosa	Wyoming tansymustard		BLM Sensitive RSFO	S3
Lepidium integrifolium	Entire-leaved peppergrass		BLM Sensitive KFO	S1
Lesquerella macrocarpa	Large-fruited bladderpod		BLM Sensitive RSFO, KFO	S2
Lesquerella multiceps	Western bladderpod		BLM Sensitive KFO	S1
Lesquerella prostrata	Prostrate bladderpod		BLM Sensitive KFO	S1
Penstemon acaulis	Stemless beardtongue		BLM Sensitive RSFO	S1
Phlox pungens	Beaver rim phlox		BLM Sensitive RSFO, KFO	S2
Physaria condensata	Tufted twinpod		BLM Sensitive RSFO, KFO	S2
Physaria dornii	Dorn's twinpod		BLM Sensitive KFO	S1
Thelesperma caespitosum	Green River greenthread		BLM Sensitive RSFO	S1
Thelesperma pubescens	Uinta greenthread		BLM Sensitive RSFO	S1
Townsendia microcephala	Cedar Mtn. Easter daisy		BLM Sensitive RSFO	S1

Source: Long, 1998; WYNDD, 1998.

[1]Management Status:

SS-BLM/RS = Special Status, BLM/Rock Springs.
S-USFS R4 = Sensitive, USFS Region 4.

[2]State Rank: assigned by WYNDD and reflects status of species within political borders of the State of Wyoming:

S1 = Extremely Rare
S2 = Very Rare
S3 = Rare
S4 = Apparently secure, but may be rare in portions of its range
S5 = Secure under present conditions

3.7.1 Bald Eagle

A bald eagle nest is located within one mile of the proposed pipeline crossing of the Green River. This nest was found to be active with birds observed on the nest during the April 2003 field survey (O&G, 2003). In addition, bald eagle foraging, potential nesting and roosting areas are found to the southeast of the proposed route within the Seedskadee National Wildlife Refuge.

3.7.2 Black-Footed Ferret

Black-footed ferrets rely almost entirely on prairie dogs for food and use prairie dog burrows for shelter and rearing their young. Suitable habitat for black-footed ferrets is present within the proposed ROW. Surveys of prairie burrowing dog activity identified several areas within 0.5 mile of the proposed pipeline with active white-tailed prairie dog towns. These areas were low in burrow density and activity was typically scattered (O&G, 2003). These areas are mapped as colonies and can be found in Appendix C.

The first of these areas of burrowing activity was approximately three miles north of the Granger Gas Plant. This area has two colonies that cover approximately 200 acres. These two colonies are approximately 1.5 miles from each other and are separated by State Highway 30, the Blacks Fork River, and a railroad (O&G, 2003).

The second area lies near Sevenmile Gulch. The colonies in this location cover approximately 200 acres. Within this complex, active burrows were observed in several locations. The burrow concentrations were low in much of this town and the areas of activity were scattered. Although the complex meets the size requirement for black-footed ferret habitat, burrow density is very low. This complex is likely associated with other colonies outside of the survey corridor and is considered to be suitable habitat for black-footed ferrets (O&G, 2003).

The third area lies in the Fourmile Gulch area, approximately 0.4 mile from the proposed pipeline. This colony covers approximately 50 acres and is scattered with low burrow density. This town is associated with other larger towns outside of the one-mile survey boundary. The area was identified by BLM Biologist Jim Dunder as being suitable habitat for black-footed ferrets (O&G, 2003).

3.7.3 Grizzly Bear

The grizzly bear has a wide range of habitat tolerance. The preferred habitat for grizzly bears is typically contiguous, relatively undisturbed mountainous habitat with a high level of topography and vegetative diversity.

3.7.4 Canada Lynx

The Canada lynx is one of three major species of wildcats found in North America, and prefers montane forest habitats. This type of habitat is absent from the areas crossed by the proposed pipeline.

3.7.5 Gray Wolf

Although wolves within Wyoming remain listed and protected under the Endangered Species Act, such wolves are considered part of the nonessential experimental population. Management flexibility is provided for managing wolves existing outside of the National Park or National Wildlife Refuge System. Areas where wolves are designated as nonessential experimental are treated as proposed rather than listed. Gray wolves are dependent on movements of big game and may occur in large ungulate migration, wintering, or parturition areas.

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3.7.6 Mountain Plover

Mountain plover habitat is present within the existing pipeline corridor as well as adjacent to the proposed route in several areas. Federal regulations require that clearance surveys will be conducted in areas of suitable habitat prior to construction during mountain plover nesting season. This seasonal restriction is applicable from April 1 through July 15. Mapping of suitable habitat within 0.25 mile of the proposed pipeline are presented in Appendix C.

3.7.7 Peregrine Falcon

Peregrine falcons prefer tall cliff faces near streams or rivers for nesting habitat. Suitable habitat is not present within one mile of the proposed pipeline. In addition, peregrine falcon nesting locations were not identified during recent field surveys (O&G, 2003).

3.7.8 Threatened and Endangered Fish

There are four listed threatened and endangered fish species possibly present in the vicinity of the proposed pipeline. The USFWS has indicated that the bonytail, Colorado pikeminnow, humpback chub, and razorback sucker may inhabit the Colorado River System in the vicinity of the proposed pipeline. The only waterways crossed by the proposed pipeline route that may support these species are the Green and Blacks Fork rivers. No documented observations of these species within the in the vicinity of the proposed pipeline have been recorded; however, the species may be present in waters of the rivers crossed by the proposed pipeline route (USFWS, 2003).

3.7.9 Candidate and Sensitive Animal Species

State sensitive animal species occur within the area of the proposed pipeline route. They include varieties of birds, mammals, and fish.

According to Wyoming Natural Diversity Database (WYNDD) records, all of the state sensitive birds have been observed southeast of the Green River crossing in the Seedskadee National Wildlife Refuge. These include the American bittern, great blue heron, osprey, merlin, burrowing owl, and Bewick's wren. Trumpeter swans are very rare and it is unlikely that they are present in the vicinity of the proposed pipeline (BLM, 1999).

Pygmy rabbits (*Brachylagus idahoensis*) have been observed, and their habitat occurs along the proposed route. Swift fox (*Vulpes velox*) are known to inhabit the sagebrush and grasslands in the vicinity of the proposed pipeline (BLM, 1999).

Fish listed as state sensitive that occur in the area are the roundtail chub, flannelmouth sucker, Colorado River cutthroat trout, and the blue head sucker. WYNDD includes a single record of a bluehead sucker from the Green River north of the Fontenelle Reservoir. The nearest cutthroat population to the proposed pipeline is more than 12 miles northwest of the proposed pipeline route (BLM, 1999).

3.7.10 Threatened, Endangered, and Sensitive Plants

Ute ladies'-tresses occur primarily on moist, subirrigated or seasonally flooded soils in valley bottoms, gravel bars, old oxbows, or floodplains bordering springs, lakes, rivers, or perennial streams. They occur at elevations between 1,780 and 6,800 feet. Field surveys were conducted for suitable habitat for the species during April, 2003. No suitable habitat or orchids were found within or adjacent to the proposed pipeline ROW. Historically, there are no documented observations of Ute ladies'-tresses along the Green River in Wyoming. There are no other federally listed T&E plant species known to occur in the vicinity of the proposed pipeline.

The BLM has indicated the following special status plant species may occur within the vicinity of the proposed pipeline: Big Piney Milkvetch, Cedar Rim thistle, large-fruited bladderpod, Payson's bladderpod, Swallen mountain-ricegrass, Opal phlox, beaver rim phlox, and tufted twinpod.

In addition to the above, the BLM identified state sensitive species that may occur in the vicinity of the proposed pipeline. These species include honey-scent sand verbena, King's milkvetch, Trelease's racemous milkvetch, sickle saltbush, echo spring-parsley, Wilcox eriastrum, divergent wild buckwheat, compact gilia, juniper prickly pear, rufous-spine prickly pear, Payson beardtongue, and sticky scorpion-weed.

Locations of potential habitat for threatened, endangered, and sensitive plants can be found in Appendix C.

3.8 AIR QUALITY AND CLIMATE

3.8.1 Climate

The climate in the Green River Basin in the area of the proposed pipeline is classified as semiarid steppe. Semiarid steppe climate exhibits large seasonal temperature variations and sufficient precipitation to support the growth of short sparse grass. The aridity is caused by distance from the Pacific Ocean and the intervening mountains that block the eastward flow of humid air (BLM, 2003).

Winters can be long and harsh while summers are usually hot and dry. Temperature extremes recorded at Green River, Wyoming near and to the southeast of the proposed pipeline route have ranged from -42° F to 104° F. The mean annual temperature is approximately 53° F at Big Piney, Wyoming north of the proposed pipeline (BLM, 2003). The annual mean precipitation is 7.7 inches per year but can vary greatly from year to year. Approximately 20 percent of the precipitation occurs as snow. Relative humidity averages approximately 55 percent (BLM, 1996).

Winds originate predominantly from the west to the southwest and can be very strong. The average annual wind speed at Rock Springs, Wyoming, just to the east of Green River, is 12 miles per hour (BLM, 1996).

3.8.2 Regulatory Authorities

The Clean Air Act (CAA) in Wyoming is administered by the Wyoming Department of Environmental Quality, Air Quality Division (WDAQ) through the Wyoming Air Quality Standards and Regulations, last updated February 7, 2003.

Ambient air quality in a given location is characterized by comparing the concentration of various pollutants in the atmosphere to the standards set by federal and state agencies. The purpose of these standards is to allow an adequate margin of safety for the protection of public health and welfare from adverse effects resulting from pollutants in the ambient air. The primary pollutants of concern for which federal and state ambient air quality standards have been established include criteria pollutants, hazardous air pollutants (HAPs), and toxic air pollutants. Emissions of HAPs and air toxics are regulated by the WDAQ with permits regulating individual emissions sources.

National Ambient Air Quality Standards (NAAQS) set the absolute upper limits for specific air pollutant concentrations in order to protect human health. These pollutants are called "criteria" pollutants and consist of carbon monoxide (CO), nitrogen oxides (NO_X), sulfur dioxide (SO_2), particulate matter of 10 microns in diameter or less (PM-10), total suspended particulates, and ozone. A geographic area that meets or exceeds the limit for a particular pollutant is called a "nonattainment" area. Areas where pollutants are measured below the limits are called "attainment" areas.

Prevention of Significant Deterioration (PSD) regulations limit emissions of pollutants from new sources in attainment areas. In order to implement its policy of non-degradation, the EPA designated types of areas in which certain types of increments of additional pollution would be allowed. Class I areas include federal lands such as national parks, national wilderness areas, and national monuments. These areas are granted special air quality protections under Section 162(a) of the federal Clean Air Act. Class II areas allow additional, well-controlled growth. The nearest Class I area is the Bridger Wilderness Area, approximately 100 miles to the northeast of the northern terminus of the proposed pipeline. Other Class I areas further to the north of the route include the Teton Wilderness, Teton National Park, and Yellowstone National Park.

Air quality related values such as visibility and acid deposition are monitored by the BLM and the state. Visibility is degraded by the presence of fine particulates in the air. The CAA does not explicitly define the qualities that comprise air quality related values (Fine, 1999); however, the state has taken steps to ensure that visibility in its Class I areas is preserved. The WDAQ prepared a 2003 "Draft Review Report on Wyoming's Long Term Strategy for Visibility

Protection in Class I Areas" which will be revised every three years. The plan is intended to map strategies through data accumulation to provide visibility protection from reasonably attributable visibility impairment (WAQD, 2003).

3.8.3 Air Quality

Air quality within Sweetwater County, where most of the proposed pipeline would be constructed, is very good to excellent (BLM, 1999). The proposed pipeline route is located in a Class II PSD area and is considered to be in attainment for all criteria pollutants (EPA AirData, 2002). The primary pollutant in the vicinity of the proposed pipeline route is particulate matter, occurring as fugitive dust originating from natural sources, unpaved roads, surface disturbance associated with construction, recreation, and livestock grazing (BLM, 1999). Measurements taken in Sweetwater County in 2002 indicated that the annual mean measurement of PM-10 was 27 $\mu g/m^3$, below the state ambient standard of 50 $\mu g/m^3$ (EPA AirData, 2002).

Annual visibility was measured in the Bridger Wilderness from 1988 through 1998. Trend analysis revealed no significant trend of worsening visibility during that time period (BLM, 2003b). Atmospheric dispersion is a measure of the atmosphere's capacity to diminish the concentration of atmospheric pollutants. Atmospheric dispersion is related to prevailing wind speed and direction, atmospheric stability, and mixing heights. Data from Rock Springs indicate that the mean annual dispersion is fair more than 60 percent of the time and moderate to strong less than 20 percent of the time (BLM, 2003).

3.9 VISUAL RESOURCES

The proposed pipeline route crosses three Visual Resource Management (VRM) sensitivity classes [Classes II (2), III (3), and IV (4)](Appendix D- VR Map from BLM, 1999) parallel and adjacent to multiple pipeline ROWs that connect the Bird Canyon Compressor Station/pipeline hub with the Granger Natural Gas Plant (Figure 1-1). The proposed pipeline's ROW parallels and is either adjacent to or overlaps with a permanent ROW of another existing natural gas pipeline.

The objectives of the three VRM sensitivity classes are as follows:

- Class II (2): The objective is to retain the existing character of the landscape. Management activities may be seen, but should not attract the attention of the casual observer.

- Class III (3): The objective is to partially retain the existing character of the landscape. Activities may draw the attention of the casual observer, but should not dominate the landscape.

- Class IV (4): The objective is to provide for management activities requiring major modifications of the existing character of the landscape. The level of

> change to the characteristic landscape can be high, and management activities may dominate the view; however, the change should repeat the basic elements of form, line, color, and texture of the surrounding landscape.

The VRM Class II area that would be crossed by the proposed pipeline is associated with the Green River, its valley/floodplain, and adjacent uplands on either side of the river. The VRM Class III areas are located south/southwest and immediately adjacent to the Class II area along the Green River and both north and south of the Blacks Fork River near Granger, Wyoming. VRM Class IV areas occupy the remainder of lands crossed by the existing pipelines and proposed new pipeline (BLM, 1999).

3.10 NOISE

Noise is defined as unwanted or annoying sound that is typically associated with human activities and that interferes with or disrupts normal activities (Salter, 2000). Sound and noise are measured as sound pressure levels in units of decibels (dB). Response to noise varies according to its type, its perceived importance, its appropriateness in the setting and time of day, and the sensitivity of the individual receptor. Human hearing is simulated by measurements in the A-weighting (dBA) network, which de-emphasizes lower frequency sounds to simulate the response of the human ear. Some typical sound levels from common noise sources are presented in Table 3-7.

Table 3-7 Sound Levels Associated With Noise Environments and Field Operations

Noise Source	Scale of A-weighted Sound Level (dBA)	Human Judgment of Noise Loudness (relative to a reference loudness of 50 dB*)
Typical construction site at 50 feet	85	*approximately 16 times as loud
Diesel truck, 40 mph at 50 feet	75	*approximately 8 times as loud
Light traffic at 50 feet	56	*approximately 2 times as loud
Rural area daytime	45'	*Reference loudness*
Rural area at night	35'	Quiet *1/2 as loud
Human voice whisper at 5 feet	20	Very quiet

Source: Compiled from BLM, 2003c; BLM, 2000; SAIC, 2002; USGS, 1981

*These values are logarithmic measurements (i.e., every 10-dBA increase is perceived by the human ear as approximately twice the previous noise level; therefore, a rural area in the day is about twice as loud as a rural area at night).

'Corrected for high winds.

The Inverse Square Law of Noise Propagation states that sound level intensity decreases by approximately 6 dBA with every doubling of the distance from the source. Further reduction occurs when sound energy travels far enough to be appreciably reduced by absorption (Harris, 1991).

The primary noise sources in the vicinity of the proposed pipeline are wind noise, traffic noise where route would be near Highway 30 and other roads, and noise from jet aircraft overflights (BLM, 1999).

The route of the proposed pipeline at it southern terminus passes approximately 0.5 miles north of the community of Granger. Residences in Granger would be considered sensitive human noise receptors. Granger is located adjacent to Highway 30 to the east and railroad tracks to the south and west. Residences in Granger are subjected to traffic noise from the highway and railroad noise as trains pass through the area.

Environmental noise regulations and guidelines for outdoor, neighborhood and/or community noise levels have been promulgated by the U.S. Environmental Protection Agency (EPA). The EPA provides guideline noise levels in relation to anticipated noise/human activity disturbance impacts in relation to industrial construction and operations, below which the general public would be protected from activity interference and annoyance. Outdoor locations "in which quiet is a basis for use" are assigned a maximum noise level of 55 dBA. Laws or regulations on acceptable noise limits have not been established by the State of Wyoming.

3.11 CULTURAL RESOURCES

3.11.1 Cultural History Overview

Cultural resources in the area of the proposed pipeline consist of sites associated with prehistoric and historic time periods. The prehistoric period extends from approximately 12,000 years before present time (B.P.) through 350 B.P. when European cultural items began to arrive in the Green River Basin. Approximately 75 percent of the sites found in the Green River Basin are prehistoric. Artifacts from prehistoric times include projectile points, grinding slabs, pottery, and evidence of camp sites (BLM, 1996).

Many historic sites in the Green River Basin are associated with historic trails. The Upper Green River Basin provided practicable routes over the Continental Divide and over the major rivers of the region. Trails provided a route through the arid region on the way to finding moister lands to the west and nearer the coast (BLM, 2003d). Several historic trails would be crossed by the proposed pipeline. They include the Oregon-California-Mormon-Pony Express Trails and the Sublette, Kinney (East Bank Kinney), and Slate Creek Cutoffs of the Oregon Trail. The Oregon Trail is listed in the NRHP (BLM, 1999). The Kinney, Slate Creek, and Sublette Cutoffs were variants of the Oregon Trail, each crossing the Green River at a different location. The routes rejoined to the west before reaching the Bear River and the main route of the Oregon Trail (BLM, 2003d).

Other historic sites in the Green River Basin are associated with the early fur trade, the frontier military, railroads, the mining industry, ranching, and early oil and gas development (BLM, 1996).

Cultural resources are protected under the National Historic Preservation Act of 1966, the Archaeological Resources Protection Act of 1979, Executive Order 11593 Protection and Enhancement *of the Cultural Environment*, and Executive Order 13007 *Indian Sacred Sites*.

3.11.2 Cultural Resource Inventory Results

Class III inventories for much of the proposed pipeline ROW were completed in association with the installation of the existing pipelines (Enders, 1987; Darlington, 1994; Murray, 1996; Murray, 1998) and the proposed, but never utilized, Jonah Gas Gathering Company's (JGGC's) Bird Canyon to Granger Pipeline, South Segment ROW (Sines, 1998). The inventories resulted in the testing and documentation of previously known sites, the recording and evaluation of previously unknown sites, and the identification of isolated finds. Forty-nine previously recorded sites were documented with the proposed MGR Rendezvous Phase IV Pipeline ROW during these previous surveys (Stainbrook and Yerkovich, 2003).

Additional field work conducted for the proposed Phase IV pipeline included:

- A Class III cultural resource inventory of areas not within the JGGC ROW including staging areas;
- A field reconnaissance to confirm the proposed and newly staked pipeline was located within the previously inventoried JGGC ROW; and
- Testing for eligibility for nomination to the NRHP (Stainbrook and Yerkovich, 2003).

Based on previous and the current Class III inventories, approximately 52 sites (49 previously recorded and 3 newly identified) and two isolated finds are documented within the proposed MGR Rendezvous Phase IV Pipeline ROW. Two sites are listed on the National Register, the Oregon Trail (48SW827), and the Oregon Trail/Pony Express Route (48SW827/48SW6274). Twenty-two of the sites are recommended eligible for nomination to the NRHP. One eligible site, 48SW6738, was not relocated (Sines, 1998) during the original JGGC Bird Canyon to Granger, South Segment, and is probably mis-plotted. The proposed pipeline crosses portions of these sites that do not contribute to their eligible status. Site 48SW2601, considered not eligible for inclusion to the NRHP, was not relocated during the current inventory. Sites 48SW6725, 48SW6739, 48SW6740, 48SW10919, and 48SW12064 were not relocated during previous inventories (Sines, 1998; Yerkovich, 2003) and are documented destroyed. Seventeen of the sites are documented not eligible for inclusion on the NRHP. One site, 48SW9739, was unevaluated to the National Register. Testing during the current project determined the site is not eligible for inclusion on the NRHP.

3.11.3 Traditional Cultural Properties

Native American tribes, including the Ute, Arapahoe, Cheyenne, Shoshone, and Shoshone-Bannock, have been identified with tribal territories located in the general area of the pipeline route. No Native American religious concerns were identified as a result of public scoping including outreach with potentially affected Native American Tribes.

3.12 SOCIOECONOMICS

The discussion in this section refers to the socioeconomic climate in Sweetwater, Lincoln, and Sublette counties. The proposed pipeline route is located primarily in Sweetwater County. The far northern reach of the pipeline enters Sublette County just north of Sweetwater County line. The pipeline would roughly parallel the Sweetwater-Lincoln County line within Sweetwater County. The cities and communities in closest proximity to the proposed pipeline would be Rock Springs (Sweetwater County), Green River (Sweetwater County), Granger (Sweetwater County), Kemmerer (Lincoln), and La Barge (Lincoln). The three counties are primarily rural and their economies are tied to traditional natural resource based industries. Agriculture provided the basis for community development during the nineteenth century; however, its importance has recently diminished. The mineral extraction industries, particularly the oil and gas industry, provides for much of the area's economic well being.

3.12.1 Demographics

The populations of Sweetwater, Lincoln, and Sublette counties are primarily white and male. Slightly over 50 percent of the population of each county is male. Sweetwater County is approximately 92 percent white while the other two counties are greater than 97 percent white. Each county contains very small populations of Native Americans, Hispanics, and other minorities (U.S. Census Bureau, 2003a, b, and c). From 50 to 67 percent of graduating high school seniors expect to continue their educations in college (madisonrealtor.com).

Recent population trends are shown in Table 3-8. Populations in the three counties peaked in the mid-1980s and gradually declined thereafter. The populations of Sublette and Lincoln counties remained fairly level during the 1990s. Contrary to their stability and the slight gain in population exhibited by the State of Wyoming, Sweetwater County has shown a net loss in population each year since 1993. The reasons for the changes in population growth/decline were probably related to the level of activity associated with the oil and gas industry (University of Wyoming, 2003). Statistics maintained by the U.S. Census Bureau indicate that while the birth rate to death rate ratio is relatively constant, increasing numbers of residents are migrating out of the county. Rock Springs, the most populous city in Sweetwater County, displays an even greater rate of population decline than the county as a whole. Recent statistics for the years 2000 and 2001 indicate that Sweetwater County continued to lose population at a rate of approximately two percent over the three-month period from April to July, 2001 (U.S. Census Bureau, 2003b). Lincoln and Sublette counties, however, show population growth over the same period, at 1.5 percent and 1.7 percent, respectively (U.S. Census Bureau, 2003b, c). The growth of Sublette

County is attributed to increasing numbers of persons who may retire there (McLeod et al., 1998).

Table 3-8 Sweetwater, Lincoln, and Sublette Counties Population Statistics

[illegible]	1990	2000	Population Change 1990 - 2000	[illegible]
Wyoming	453,588	493,782	40,194	0.9
Sweetwater County	38,823	37,613	-1,210	-0.3
Rock Springs	19,134	18,708	-426	-2.23
Lincoln County	12,625	14,573	1,948	1.4
Sublette County	4,843	5,920	1,077	2.0

Source: Real Estate Center at Texas A&M University 2002, a, b, c, and d; and ER. Sys.com, 2001

3.12.2 Economic Activity

Wyoming's economy reached the bottom of an energy bust in 1987 and started to recover thereafter. The recovery began to slow in 1996. The state economic forecast is for slow growth through 2008 (Wyoming Department of Administration and Information, 2000).

The primary revenue producing industries in Sweetwater, Lincoln, and Sublette counties are mining, including oil and gas, the government, transportation, and manufacturing. The mining industry accounted for approximately 40 percent of total earnings in the first part of the decade 1990-2000; however, that percentage declined to approximately 32 percent by 1999. Farming and agricultural services declined by 25 percent over the decade, and transportation and utilities declined by three percent. Manufacturing revenues, though, displayed growth during this period to account for over 10 percent of total revenues generated (BLM, 2003e).

Mineral property is the major component of property assessed by the state at 93 percent, and minerals production is the major source of tax revenues for the government. Oil and gas production comprised 82 percent of all mineral valuation in the three-county area in 2001. Of all property and production assessed by state and local governments, oil and gas operations accounted for 67 percent of assessed value in 2001. Tax revenues from mineral production were approximately $114 million in 2001. Approximately 91 percent of that figure was derived from oil and gas operations. It is not surprising, then, that oil and gas operation in the three counties accounted for 63 percent of the property taxes generated for fiscal year 2001. In addition, natural gas production generated the greatest portion of severance tax revenues for the counties at approximately 73 percent. Federal royalties generated from mineral production were $4.2 million in 2001(BLM, 2003e).

In 1995, the median household income in Sweetwater County was $47,118. In 1999, the per capita income was $29,153. Approximately eight percent of its population lived below poverty level (University of Wyoming, 2003).

3.12.3 Employment

Total employment in the three counties of interest grew 12 percent from 1990 through 1999, lagging behind a 20.4 percent growth for the state. The primary economic activities with respect to employment in Sweetwater, Lincoln, and Sublette counties are retail trade, services, government, and mining, including oil and gas operations. The mining industry showed a decline in employment over this time while the other employment sectors experienced growth. Despite the decline, approximately 13 percent of the labor force in the three counties was employed in natural resource extraction, as is typical of many rural areas in the western United States. The counties also showed a slightly higher level of employment associated with farming and farm services (4.4 percent) than the state as a whole (3.8 percent) (BLM, 2003e). Employment figures for the second quarter of 2000 indicated that Sublette County had a significant gain in jobs, but Sweetwater and Lincoln counties fell approximately 2.6 percent as a result of job losses in the mining, construction, transportation, and public utilities sectors (Bullard, 2001).

Unemployment in Sweetwater and Lincoln counties was approximately five and six percent respectively in 2000, somewhat higher than the state unemployment rate of approximately 2.5 percent. Sublette County, however, fell below the state figure at slightly less than three percent (BLM, 2003e).

3.13 ENVIRONMENTAL JUSTICE

Federal agencies are required to conduct their programs, policies, and activities that substantially affect human health or the environment in a way that ensures that no person is excluded from participation therein, denied the benefit of, or subjected to discrimination due his race, color, or national origin. Executive Order 12898 requires federal agencies to assess their projects to ensure they do not result in disproportionately high and adverse environmental, health, or safety effects on minority or low-income populations.

Sweetwater County is approximately 92 percent white while Lincoln and Sublette counties are greater than 97 percent white. Each county contains very small populations of Native Americans, Hispanics, and other minorities (U.S. Census Bureau, 2003a, b, and c). Approximately eight percent of the population of Sweetwater County lives below poverty level (University of Wyoming, 2003).

3.14 HAZARDOUS MATERIALS AND WASTE

The proposed pipeline would be located near several other pipelines that contain gas and fluids produced from oil and gas wells. Other typical hazardous materials found on or near oil and gas locations that may be nearby the pipeline route include oil and gas pipelines, above ground storage tanks containing produced liquids, material transport containers on passing trucks, and fuel tanks in parked and moving vehicles.

Two solid and/or hazardous waste facilities are located in Sweetwater County near Granger. There are no RCRA Corrective Action sites in the area surrounding the pipeline route (WDEQ, 2001).

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES OF EACH ALTERNATIVE INCLUDING CUMULATIVE IMPACTS

4.0 INTRODUCTION

Chapter 4 addresses direct, indirect, and cumulative impacts of the Proposed Action and No Action alternatives for each affected resource. Direct impacts are considered primary impacts while indirect impacts are considered secondary impacts. Beneficial and adverse, on-site and off-site, construction, operational, and maintenance impacts are also described, as appropriate. Adverse impacts include those that could be avoided or diminished with the application of mitigation measures as well as unavoidable adverse impacts. The analyses focus on overall project development impacts and differentiate impacts from the short-term vs. long-term scenarios, where appropriate. Long-term impacts are considered to be those whose effects that would last more than five years. Finally, the analyses identify any residual impacts, those direct, indirect, or cumulative impacts that would remain after application of the mitigation measures.

Adverse impacts are described as significant or large, or insignificant or small. The following criteria were developed by the Council on Environmental Quality to determine whether an action's potential environmental effects are severe enough to be significant:

- Beneficial or adverse effects;
- Effect on public health and safety;
- Effect on a unique geographic area;
- Controversial effects on the human environment;
- Highly uncertain, unique, or unknown risks;
- Precedential effects;
- Cumulative effects;
- Effect on historic, scientific, or cultural resources;
- Effect on endangered species; and
- Compliance with federal, state, or local law (Fogelman, 1990).

A finding of significant impact would require the development of an environmental impact statement.

The impact analyses presented in this chapter consider MGR's extensive environmental commitments described in Chapter 2 and refer to specific commitments, as appropriate, to characterize potential impacts and substantiate related impact findings.

Any measures, in addition to those described in Chapter 2 that could be applied to further reduce or avoid adverse impacts, are described in specific resource area sections as mitigation measures.

4.1 LAND USE AND GRAZING

4.1.1 Proposed Action

Implementation of the Proposed Action would not preclude current other uses of the areas in and around the pipeline route. There would be no changes in surface ownership. Installation of the pipeline does not conflict with current zoning regulations.

Some displacement of multiple uses on federal land from the pipeline ROW would slightly reduce the availability or quality of the resources, primarily in the temporary unavailability of land within the grazing allotments. If the proposed pipeline were constructed, land disturbed by construction would be stripped of vegetation as a result of the blading within the ROW. Although the surface would be available to grazing animals after construction, re-establishment of vegetation would require time and sufficient precipitation. It is estimated that 34.5 AUMs would be impacted for the short-term until grasses are re-established after one to three years. The values of grazing AUMs for cattle and sheep were estimated using data obtained from the Wyoming Agricultural Service. Cattle grazing was valued per AUM at $31.80, and sheep grazing was valued per AUM at $27.22 (BLM, 2003e). Assuming that all animals utilizing the grazing leases are cattle provides a conservative estimate of the total value of the grazing temporarily affected by the proposed pipeline at $1,097.10. The impacts to grazing are considered to be minimal because they would be short-term (one to three years) and would not affect the long-term usability of the grazing allotments.

Consistent with mitigation presented in Section 2.3, MGR shall not open any more trench than can be successfully backfilled and compacted in a two-day period. Portions of the proposed ROW within 0.25 mile of livestock will be fenced if required by the BLM field agent. Application of these measures would minimize impacts of open trench conditions on livestock and wildlife, particularly big game species.

Construction of the pipeline would not change the health status of the rangeland in general. Resources such as soils, water, vegetation, and air would not be adversely affected. Please refer to sections in this EA describing the current status and environmental consequences to each of these resources.

Impacts to local transportation would be minor and temporary. Pipeline construction would result in additional traffic along the roadways. Increased traffic would be temporary and limited to the four-month construction timeframe. The existing road network would not be altered to construct the pipeline. Existing roads to be used in accessing the proposed construction ROW are identified on the maps in Appendix B. Road crossings would be accomplished through boring so that traffic would not be impeded. The proposed pipeline route would parallel and be adjacent to multiple existing pipeline ROWs. The proposed route's construction ROW would overlap with existing pipeline ROWs such that impacts to environmental resources would be minimized.

No adverse impacts are expected to affect recreation resources. Locating the pipeline in parallel and adjacent to existing pipelines removes the possibility of impact to any of the nearby recreational areas. Boring under the Green River would eliminate adverse impacts to water quality that could impair trout fishing and wildlife usability down-river at the Seedskadee National Wildlife Refuge.

4.1.2 No Action

There would be no temporary loss of 34.5 AUMs corresponding to the portion of the pipeline ROW that would be bladed for construction purposes. There would be no temporary increase in traffic along area roads near the pipeline ROWs.

4.1.3 Cumulative Impacts

There would be no cumulative impacts resulting from construction of the pipeline because the expected consequences are nonexistent or insignificant.

4.2 PHYSIOGRAPHY AND GENERAL GEOLOGY

4.2.1 Proposed Action

The Proposed Action would have no adverse impacts on mineral resources under the pipeline route and is proposed in accordance with the existing Utility Right-of-Way Grant of Easement. Construction or operational activities of the pipeline would not precipitate seismic activity in the vicinity of the site because there are no active faults in the immediate area, and there would be only minor intrusion into bedrock. Excavation for the new pipeline would occur much below the alluvial surface in some locations along the route; however, the fractured nature of the bedrock would probably allow excavation to proceed without blasting. The terrain along the route shows local variations in elevation, but because the slope is generally low, is not physically predisposed to the occurrence of landslides that could be exacerbated by precipitation on surfaces exposed or denuded as a result of construction activities. The slope rating indicates that the surface along the route is suitable for surface and deep mechanical site preparations (Halasz et al., 2000).

There would be no impacts to the availability of oil and gas resources, locatable or salable minerals as a result of pipeline construction because there are no known occurrences of those resources along the pipeline route.

Construction of the proposed pipeline would, in some areas, disturb bedrock as trenching occurs in the relatively shallow soils and would have the potential to impact undiscovered scientifically significant fossils; however, the implementation of the applicant-committed mitigation measures would effectively eliminate impacts to paleontological resources. Applicant-committed mitigation measures include worker instruction and education with respect to legal requirements and procedures if fossils were uncovered. They also include contingency plans if a paleontological discovery were made.

Increased public access to the construction sites may increase the opportunities for unauthorized fossil collection; however, because the pipeline would be constructed adjacent to existing multiple pipelines, it is unlikely that new discoveries would be made.

4.2.2 No Action Alternative

The No Action alternative would result in no impacts to geological resources. The existing pipeline ROWs would remain in their current condition subject to environmental conditions. Bedrock would not be disturbed.

Implementation of the No Action alternative may make it more difficult for oil and gas producers to transport their products to market. Without the ability to transport hydrocarbons, operating companies may be forced to scale back production on their existing wells and/or re-evaluate their future drilling plans.

There could be adverse indirect impacts to areas served by pipelines that transport oil and gas from the region. Diminished availability of the mineral resources may result in diminished ability to conduct activities that depend upon ready availability of fuel.

If the pipeline were not constructed, paleontological resources would not be disturbed or inadvertently destroyed. There would also, however, be no possibility that additional paleontological resources would be discovered, recorded, and studied.

4.2.3 Cumulative Impacts

There would be no cumulative impacts to geological or paleontological resources as a result of pipeline construction. Applicant-committed mitigation measures, including those in Section 2.3.8, would effectively eliminate adverse impacts to these resources.

4.3 SOILS

4.3.1 Proposed Action

Potential impacts from pipeline construction include stream sedimentation, soil contamination, and stream bank and channel instability. None of the soil types identified along the pipeline route, with the exception of the Kandaly, are especially susceptible to surface disturbing activities (BLM, 1996). Linear features, such as a pipeline, can have augmented erosion impacts due to the large amount of edge between disturbed and undisturbed areas. There would be some loss of soils due to the physical alteration of the existing soil profile. In general, there are no large steep areas along the route where development would result in slumping or landslides.

Soil exposure to forces of erosion would be increased during construction after vegetation is stripped and topsoil is bladed into windrowed stockpiles within the construction ROW.

Windrowed topsoil and exposed subsoils would be subject to accelerated water and wind erosion due to loss of protective vegetative cover, higher runoff rates, lower infiltration rates, and more direct exposure to wind. The temporary placement of topsoil and excavated subsoil into separate windrowed stockpiles for the duration of construction, as committed to by the applicant, would prevent soil mixing and would allow for restoration of the soil profile and optimization for re-establishment of productive soil conditions and vegrtative cover following trench backfilling.

Soil compaction from vehicular traffic could result in reduced soil productivity due to loss of soil structure, increased erodibility, and decreased infiltration and water storage capacity. Increased soil erosion can potentially increase sediment yield, turbidity, and salinity to drainages. As described in Section 2.2.1, all equipment and vehicular access would be confined to existing roads and the established ROW, thereby avoiding soil compaction on undisturbed areas. MGR has committed to avoid vehicle travel during saturated soil conditions to avoid impacts that could be caused by rutting.

Travel through/across ephemeral stream channels could break down banks, increase sediment load, cause or accelerate erosion, and destabilize the channel. The pipeline would be bored beneath the Green and Blacks Fork rivers to prevent erosion and to minimize any increase in sediment load to the waters from pipeline construction. Boring beneath the rivers would preserve the vegetation along the river banks to maintain soil stability. If river banks were affected by pipeline construction, MGR would return the bank to its original form and stabilize the slope.

Because of the applicant-proposed environmental protection measures presented in Sections 2.2.3 and 2.3.5, impacts to soils along the pipeline route would be avoided or minimized.

4.3.2 No Action Alternative

Under the No Action alternative, soils along the proposed pipeline route would not be further disturbed. If this federal action were denied, it is possible that other pipelines would be constructed adjacent to the existing pipelines in the future.

4.3.3 Cumulative Effects

The incremental amount of added disturbed area outside the existing linear areas of disturbance from the construction of existing pipelines adjacent to the propose pipeline ROW would not contribute to long-term cumulative adverse effects to soils with the application of applicant-committed stabilization and reclamation measures. The establishment of native vegetation along the proposed pipeline ROW would limit the amount of soil loss from erosion and along with returning productive soils conditions in the existing pipeline ROWs plus successful reclamation of the proposed pipeline ROW, cumulative impacts to soil stability and productivity would be minimal and short-term.

4.4 WATER RESOURCES

4.4.1 Proposed Action

Potential impacts to water resources would be limited to surface waters. The depth to ground water along the entire pipeline route would preclude adverse effects from pipeline construction and operations. There would be no impacts to water wells. Potential impacts to surface waters could include short-term increased turbidity, salinity, and sedimentation of the surface waters during seasonal flows or precipitation events due to runoff and erosion from disturbed upland areas.

Clearing and blading followed by construction vehicle travel across ephemeral stream channels could break down banks, increase sediment load, cause or accelerate erosion, and destabilize the channel. However, vehicle access to the pipeline ROW would be confined to existing access roads and to the construction ROW. No new roads would be constructed for this project. If vehicles were operated when soils were saturated, ruts could form that could increase erosion. MGR, however, has committed to suspending operations per Section 2.3.5 if ruts form that are greater than four inches deep, effectively mitigating this potential effect.

Crossing the Green and Blacks Fork rivers could potentially cause an increase in sedimentation from river bank erosion. The pipeline would be bored beneath the Green and Blacks Fork rivers to prevent river bank disturbance and potential accelerated erosion and to ensure no increase in sediment load to the waters. Potential adverse effects to the floodplains of the Green and Blacks Fork rivers would be eliminated by boring beneath the floodplains between staging areas located on higher ground.

Accidental leaks from the pipeline could also impact surface water quality. The principal risks of pipeline operations include excessive pressure, physical damage through flooding or soil erosion, and corrosion. Pipeline failures due to excess pressure are prevented through engineering design and relief valves which dissipate excessive pressures as specified in 49 CFR 192.195. Operating pipelines are continuously monitored through periodic leakage surveys and patrols, as required by 49 CFR 192.705 and 706, to anticipate and correct problems before failures occur. The possibility of leakage into either river is remote.

Approximately 7.1 and 5.1 acre-feet of water would be withdrawn from the Blacks Fork and Green rivers, respectively, for hydrostatic testing after pipeline installation is complete. Permits or license agreements for water withdrawal would be obtained from the state. The terms of the permit would ensure that the quantity used for testing would not harm uses of the river waters. Since discharge operations would also be permitted through the state, permit conditions would ensure the discharged water would not damage soils or surface waters at the point of discharge. The test water would be tested and treated, if necessary, to ensure that it meets local, state, and federal water quality standards and permit conditions prior to its release.

Applicant-committed mitigation measures including those outlined in Section 2.3.10 would effectively eliminate or minimize most adverse impacts to water quality, quantity, or use.

4.4.2 No Action Alternative

If the pipeline were not constructed, current activities that have the potential to adversely affect water quality would continue. These activities include livestock grazing.

4.4.3 Cumulative Impacts

Construction of the pipeline would require that the pipeline cross the Green and Blacks Fork rivers. The multiple pipeline route, however, was established so that pipelines could be constructed in a way that minimizes impacts to natural resources, including water resources. Applicant-committed mitigation measures in Section 2.3 would effectively eliminate contributions to adverse cumulative impacts to water quality, quantity, or use.

4.5 VEGETATION, RIPARIAN AREAS, WETLANDS, AND NON-NATIVE & INVASIVE SPECIES

4.5.1 Proposed Action

Impacts to vegetative resources are evaluated with respect to long-term vegetation productivity and permanent changes in species composition. Construction of the proposed pipeline would temporarily disturb approximately 478 acres. After construction is complete, approximately 337 acres would constitute the 30-year ROW. Disturbed areas would consist of either direct removal of vegetation from blading, grading, and trenching of the pipeline ROW or superficial damage from vehicles and foot traffic on the ROW. Invasive, noxious weed species could infest disturbed areas should seeds or cuttings of some species be transported naturally or accidentally to the disturbed areas. All disturbed areas would, however, be reclaimed and revegetated soon after construction is complete and in accordance with Section 2.2.3 and agency requirements. The upland seed mixture listed in Table 2-3 would promote the -term establishment of grasses in the short-term while the shrubs would become established over a longer period of time. Grasses could require two to three years for successful re-establishment (70 percent cover) in the area's arid environment. The shrub component on newly disturbed areas may require more than 20 years for recovery to pre-disturbance levels after reseeding and reclamation activities begin. As an applicant-committed mitigation measure, trees, where present, would not be disturbed. Long-term productivity of shrubs would be adversely affected within the ROW and construction areas. Long-term productivity of grasses would not be affected.

Surface disturbance activities could affect special status plant species directly and indirectly by destroying individuals or their habitat, and by the introduction of weeds. Weedy species often thrive on disturbed sites such as road ROWs and out-compete more desirable plant species. Increased weed infestation may render a site less productive as a source of forage for wildlife and livestock. Although some weed infestation may be anticipated on the proposed pipeline ROW, the application of weed preventative and control measures presented in Section 2.3.15

would minimize impacts from weed species. The overall impacts to vegetative resources would, therefore, be minimal.

Wetlands and riparian areas associated with the pipeline crossings of the Blacks Fork and Green rivers would be completed in such a way as to avoid direct impacts and to allow the wetlands/riparian area to continue to function. The use of a HDD would allow the pipeline to be constructed beneath these environmentally sensitive areas in order to avoid surface disturbance. In addition, MGR would obtain the permits required to complete pipeline construction in these areas. Section 404 and Nationwide #12 permit conditions would require adequate measurements to be taken to protect these resources. Based on use of protective measures described in Section 2.3.10 and compliance with the Nationwide #12 permit administered by the ACE, there would be no loss of wetlands/wetland function or riparian areas/riparian area functionality or impacts to existing wetlands/riparian areas. Therefore, wetlands and riparian areas would not be adversely affected by construction and operation of the pipeline.

4.5.2 No Action

There would be no disturbance to the existing vegetation on the ROW nor to riparian area or wetlands; however, denial of the Proposed Action does not preclude the construction of additional pipelines in adjacent, parallel ROWs at a future date that would adversely affect vegetation.

4.5.3 Cumulative Impacts

Construction of the pipeline would increase the amount of disturbed lands along the pipeline route by 478 acres. The multiple pipeline route, however, was established so that pipelines could be constructed in a way that minimizes impacts to natural resources. The establishment of the pipeline route allows disturbance to be localized. The incremental loss of vegetation by construction of the proposed pipeline would be minimal.

4.6 WILDLIFE AND FISHERIES

Any impact to wildlife resources will be considered significant if any action related to the construction of the proposed pipeline should happen to: prevent realization of Wyoming Game and Fish Department's big game population objectives, result in the disruption of breeding raptor activities, result in the permanent disruption in sage grouse breeding activities, and/or interfere with WGFD fish population objectives. Due to the small amount of habitat loss compared to large expanses of available habitat in the area, no significant impacts to wildlife are anticipated.

4.6.1 *Proposed Action*

4.6.1.1 Big Game

Loss of habitat and disturbances to animal activity would occur due to the presence of construction activity in the proposed area.

Construction of this project may disturb up to 200 acres of pronghorn crucial winter range. During winter periods, in occupied crucial winter range, construction activities could have an adverse effect on the pronghorn. Avoiding or minimizing construction activities between November 15 and April 30, as required by BLM management guidelines in critical range areas, would prevent disturbances to pronghorn (BLM, 2003f). Impacts to the local population would include loss of forage from removal of vegetation in the construction ROW and displacement in the vicinity of construction activities during the expected three-month construction period. Since much of the construction would be adjacent to existing ROWs, disturbances would be minimal to pronghorn antelope herds in the area. Following construction, the pipeline ROW would be reseeded with grasses and forbs and would again be available to the species after the grasses are established. Due to the availability of habitat in the surrounding area, adverse impacts to pronghorn are anticipated to be minimal.

Impacts to other big game species are anticipated to be minimal. No crucial winter range or other sensitive big game areas for mule deer or moose would be crossed by the proposed pipeline. The 20 acres of severe winter relief range for elk would be used by elk only during extreme weather conditions or when better quality winter range cannot be found. No significant impacts to migratory wildlife movements are anticipated, and no fencing is proposed.

4.6.1.2 Raptors

According to USFWS guidelines, activities that would cause disturbance within 0.5 mile of raptor nests would be avoided between February 1 and July 31 (USFWS, 2003). Therefore, no impacts to raptors are expected.

4.6.1.3 Upland Birds, Including Sage Grouse

Due to the limited acreage of the proposed pipeline ROW and the large amount of habitat available to these species in the area, adverse impacts to upland game birds are not anticipated from construction and operation of this project.

Impacts to sage grouse would be further minimized if pipeline construction and maintenance activities did not occur between February 1 and July 1 during sage grouse breeding and nesting season. As described in Section 2.3.3.11, MGR would preclude construction activities within 0.25 miles of a sage grouse lek during strutting periods and would preclude construction within two miles of an active lek during the nesting season. Because the pipeline would be constructed in parallel and with overlap with existing pipeline ROWs, portions of the pipeline disturbance

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would have been previously disturbed by the construction of previously constructed pipelines. Approximately 478 acres of vegetation would be disturbed, with some of the sagebrush not yet established from previous disturbance. Disruption of a small amount of habitat is not expected to adversely affect sage grouse.

4.6.1.4 Other Wildlife

The project is anticipated to displace individual animals and birds in the vicinity of construction activity. The disturbance would be limited to the ROW and would be temporary due to the anticipated three to four month construction period and re-establishment of vegetation within one to three years.

4.6.1.5 Fisheries

Construction activities would have no measurable effects to fish populations in the Green and Blacks Fork rivers. MGR would bore beneath the rivers. Prompt reclamation of nearby staging areas, as described in the applicant committed mitigation measures in Section 2.3.10, would minimize the amount of sediments reaching the river (BLM, 1999).

4.6.1.6 Wild Horses

The BLM considers any activity that results in substantial habitat loss or permanent reduction in population numbers below set management levels a significant impact. Revegetation with palatable forage would occur along the ROW after construction is complete. Grasses would be established in approximately three years. Horses would be able to leave the relatively small, affected area during pipeline construction. Due to the availability of habitat in the area surrounding the pipeline route, the 478-acre disturbance and short-term loss of forage caused by construction would not have a significant impact on the wild horses in the area.

Consistent with mitigation presented in Section 2.3, MGR shall not open any more trench than can be successfully backfilled and compacted in a two-day period. Portions of the proposed ROW within 0.25 mile of livestock will be fenced if required by the BLM field agent. Application of these measures would also minimize impacts of open trench conditions on wild horses.

4.6.2 No Action Alternative

If construction and maintenance activities would not occur, impacts to wildlife and fisheries, whether positive or negative, would not occur. There would be no disruption of habitat or potential habitat. Because the proposed pipeline route lies adjacent to existing pipeline ROWs, additional pipeline construction could take place parallel and adjacent to the existing pipeline ROWs in the future. Effects, such as the ones described for this project could occur in association with the completion of a different pipeline project following the same route.

4.6.3 Cumulative Effects

There would be no anticipated cumulative effects to wildlife or fisheries from the construction of the proposed pipeline. The incremental disturbance associated with the pipeline's construction would not significantly add to disturbed areas or threaten the viability of any of the species that may inhabit the area.

4.7 THREATENED AND ENDANGERED AND SPECIAL STATUS SPECIES

Actions that lead to a jeopardy opinion for any federally listed T&E species would be considered a significant impact. An action that causes any candidate species to become a listed T&E species would be considered a significant impact. With consideration given to the applicant-committed mitigation measures as well as federal and state protective regulations and guidelines, no significant impacts to T&E or sensitive animal and plant species are anticipated.

4.7.1 Proposed Action

4.7.1.1 Bald Eagles

The active bald eagle nest at the Green River crossing would not be adversely affected or disturbed with implementation of the MGR's proposed action and USFWS specified procedures that protect bald eagles. Federal guidelines prohibit disturbance within one mile of the nest between February 1 and August 15.

4.7.1.2 Black-footed Ferret

Although black-footed ferrets are extremely rare and have not been identified in the area, white tailed prairie dog colonies are present and could provide potential ferret habitat. To protect black-footed ferrets potentially occurring in the area from any potential impact to individuals or habitat, ferret surveys would be conducted prior to construction. Surveys for black-footed ferrets would be conducted during July 2003 in all areas of suitable habitat within 0.5 mile of the proposed pipeline ROW. If black-footed ferrets are located, MGR will consult with the appropriate agency to determine necessary mitigative measures. Therefore, no impacts to black-footed ferrets would occur.

4.7.1.3 Grizzly Bear

Relatively undisturbed mountainous habitat is not present within or near the proposed pipeline route; therefore, grizzly bears are not likely to occur in the areas crossed by the proposed pipeline. No adverse impacts to grizzly bears are anticipated due to the construction and operation of this pipeline project.

4.7.1.4 Canada Lynx

The absence of montane forest habitat along the pipeline indicates Canada lynx are not likely to occur within the vicinity of the proposed pipeline. No adverse impacts to the species are expected as a result of construction and operation of this project.

4.7.1.5 Gray Wolf

The proposed pipeline crosses two big game wintering areas where gray wolves could potentially be present. However, pipeline construction, as currently planned for later summer and early fall 2003, would likely not take place within these areas while they are occupied by big game herds. In addition to avoiding these areas when big game and wolves are most likely to be present, the slow conspicuous movements of construction equipment are not likely to impact this highly mobile species. In the unlikely event that wolves are present in the vicinity of the proposed pipeline during construction and operations, impacts to the species, if any, would be limited to displacement of individuals during the daytime.

4.7.1.6 Mountain Plover

Positive effects for the species may occur due to the ground disturbance of construction and removal of taller vegetation. Adverse impacts to mountain plover are not anticipated if commencement of construction begins after the end of nesting season on July 15. By this time, young mountain plover should have already fledged.

4.7.1.7 T&E Fish Species

Water withdrawals from the Green River for hydrostatic testing and dust control could have a negative effect on the T&E fish species in the river if large amounts were withdrawn. Water withdrawal would be permitted by the State of Wyoming with the concurrence of the USFWS. No significant adverse impacts to listed fish species are expected if permit conditions are met.

4.7.1.8 Sensitive and Candidate Wildlife Species

The Proposed Action is not likely to jeopardize the status of sensitive or candidate wildlife species. Disturbance of sagebrush-grasslands may reduce potential habitat for swift fox. Because of the swift fox's mobility and infrequent use of the area, the pipeline is not likely to jeopardize the viability of the species. Pygmy rabbits would not be permanently displaced due to availability of habitat in surrounding areas and the short-term nature of pipeline construction.

Due to the availability of habitat surrounding the proposed pipeline, minimal impacts are expected to occur to the local small mammal populations of the area.

Burrowing owls or owl nests were not observed during field surveys. Areas of suitable habitat (prairie dog colonies) inside the proposed pipeline corridor were investigated during summer and fall of 2002 and again in April 2003. Surveys for burrowing owls would be conducted during July 2003 prior to construction to ensure no adverse effects would be generated. If any owls are observed, the appropriate 0.5-mile buffer would be observed until chicks have fledged (Oles, 2003).

Water withdrawals from the Green River for hydrostatic testing and dust control could have a negative effect on sensitive fish species in the river if large amounts were withdrawn. Water withdrawal would be permitted by the State of Wyoming with the concurrence of the USFWS. No significant adverse impacts to listed fish species are expected if permit conditions are met.

4.7.1.9 Threatened, Endangered, and Sensitive Plant Species

No known populations of federally listed plant species are present within the proposed pipeline ROW. Due to the documentation of potential habitat for sensitive plant species in the vicinity of the proposed pipeline, populations may occur. According to the BLM, surveys for these species indicated potential impacts to known populations would be minimal and would not jeopardize the species due to presence of habitat and populations on either side of the 70- to 90-foot wide construction ROW (BLM, 2003f).

4.7.2 No Action

If pipeline construction and maintenance activities would not occur, impacts to T&E and sensitive animal and plant species would not occur. There would be no disruption of habitat or potential habitat.

4.7.3 Cumulative Effects

There would be no anticipated cumulative effects to wildlife or fisheries from the construction of the proposed pipeline. The incremental disturbance associated with the pipeline's construction would not significantly add to disturbed areas in the area to threaten the viability of any of the species that may inhabit the area.

4.8 AIR QUALITY AND CLIMATE

4.8.1 Proposed Action

Anticipated impacts to air quality would result from vehicle and heavy equipment/construction equipment exhaust emissions and elevated levels of particulates associated with construction activities. Increases in levels of fugitive dust would be temporary at any location. The construction site would be temporally and spatially changing as trenching and installation takes place along the route. Elevated fugitive dust levels and exhaust emissions at any particular location are expected to be relatively brief as the construction time for the entire 55.5-mile route is estimated at four months. MGR has committed to minimize vehicle exhaust emissions through proper maintenance.

No accidental emissions are expected to be associated with routine pipeline operation because the pipeline would be buried.

Overall fugitive dust emissions and impacts to air quality are expected to be negligible.

4.8.2 No Action Alternative

Should the federal action be denied, air emissions associated with construction activities associated with the pipeline would not occur. Other emissions associated with existing industrial activities and vehicle exhaust from transportation corridors would still be present.

4.8.3 Cumulative Impacts

Temporary exhaust emissions and particulate levels associated with construction and operation of the proposed pipeline would not effectively degrade existing air quality. There would be no long-term incremental adverse effect that would substantially change or degrade air quality.

4.9 VISUAL RESOURCES

4.9.1 Proposed Action

The proposed pipeline crosses the Green River and approximately four miles (7.2 percent of the 55.5-mile long proposed pipeline) of land designated as VRM Class II centered on the river. Construction and operation, including reclamation, of this segment of the pipeline through VRM Class II lands will not change the existing character of the landscape and should not attract attention following the re-establishment of vegetation as part of committed reclamation of the disturbed construction ROW. No significant surface facilities or modifications of topography through excavation and filling are proposed that would change the existing character of the lands crossed by the existing pipelines, the adjacent proposed pipeline route, and the surrounding

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landscape. The river crossing by the pipeline will be completed by boring a tunnel beneath the river and pulling pipe through bored tunnel to the other side instead of trenching the river banks and bed to minimize disturbance of the river banks and bed.

Approximately 13 miles (23.4 percent) of the proposed pipeline would cross VRM Class III landscapes. Construction and operation of the proposed pipeline would not change the existing character of the landscape following ROW revegetation. Pipeline construction and operation in this VRM class would exceed the requirements for partially retaining the existing character of the landscape. The activity may draw the attention of the casual observer, but should not dominate the landscape. The Blacks Fork River crossing would also be bored, as described above for the Green River crossing, to minimize impacts to the existing character of the landscape.

The remaining 38.5 miles (69.4 percent) of the 55.5-mile long pipeline would cross VRM Class IV landscapes that allow for major modifications of the existing character of the landscape. As the proposed pipeline would not result in major changes to the existing character of the landscape, the construction and operation of the proposed pipeline in this VRM class of landscape would exceed VRM Class IV objectives.

Impacts to visual resources along the pipeline route would be insignificant. Construction of the pipeline would not compromise the existing character of the landscape.

4.9.2 No Action Alternative

Implementation of the No Action alternative would result in no additional disturbance in the vicinity of the existing natural gas pipelines; therefore, no additional impacts to the existing character of the landscape would occur.

4.9.3 Cumulative Impacts

Reclamation/revegetation of the proposed pipeline along with the continuing recovery of vegetation established on the adjacent pipeline ROWs would limit cumulative impacts to all three VRM classes and would maintain the existing character of the landscape.

4.10 NOISE

The purpose of the noise analysis in this EA is to estimate and characterize construction and operational impacts resulting from the Proposed Action and the No Action Alternative. Detailed predictive noise modeling to precisely define future noise levels was not considered necessary.

4.10.1 Proposed Action

The primary source of noise impacts resulting from the Proposed Action would result from the heavy equipment used for constructing the pipeline. Additional noise would also result from increased traffic associated with pipeline construction.

Noise impacts during the construction phase would be temporary at any location. The construction site would be temporally and spatially changing as trenching and installation takes place along the route. Elevated noise levels at any particular location are expected to be relatively brief as the construction time for the entire 55.5-mile route is estimated at four months. Based on an average noise level of 85 dBA measured at 50 feet from a typical construction site, the expected noise level was estimated between the nearest known receptor, the community of Granger, to a construction site. The distance between the two is approximately 2,640 feet, or 0.5 mile. Using the Inverse Square Law of Noise Propagation, the expected noise level at Granger is approximately 51 dBA (see Table 4-1). The noise level would be lower than the EPA noise guidelines. Therefore, no human receptors at residences in Granger are expected to be impacted by pipeline construction activities for even a short period of time during the daylight hours during which construction would take place.

Table 4-1 Reduction of Sound Level Intensity from a Pipeline Construction Site as a Function of Receptor Distance

Distance (feet)	Noise from Construction Site at Distance	Noise above Night Rural Background (35 dBA)
50	85	50
100	79	44
200	73	38
400	67	32
800	61	26
1600	55	20
3200	49	14

Pipeline construction would cause truck traffic to increase slightly. Noise emanating from truck traffic, 56 to 75 dBA, is considerably less than noise generated by construction activities at 85 dBA. Truck traffic would be inconsistent and transient. MGR has agreed to muffle construction equipment and vehicles to minimize construction related noise. Impacts from traffic noise during construction are expected to be insignificant.

There may be infrequent additional traffic associated with pipeline maintenance; however, this small amount of incremental traffic is not expected to be noticeable. There would be no noise impacts associated with the operation of the pipeline after it is installed.

4.10.2 No Action Alternative

Should the federal action be denied, noise associated with construction and operational activities associated with the pipeline would not occur. The noise impacts associated with existing industrial activities, transportation corridors, and the wind, however, would still be present.

4.10.3 Cumulative Impacts

The small, temporary, transient noise impacts associated with construction and operation of the proposed pipeline would not effectively add to the existing noise environment. There would be no significant cumulative impacts to the noise environment.

4.11 CULTURAL RESOURCES

4.11.1 Proposed Action

Because of the potential for the project to affect subsurface historic properties not detected by the Class III inventory, an open trench inspection would be conducted in accordance with the terms of the Discovery Plan and Research Orientation, detailed in Appendix C of Class III Cultural Resource Inventory Mountain Gas Resources Rendezvous Phase IV Pipeline Sublette and Sweetwater Counties, Wyoming, by Stainbrook and Yerkovich of Western Archaeological Services, Rock Springs, Wyoming (2003).

Per a BLM-established Memorandum of Agreement covering this area, the aspect of setting for the historic trails to be crossed by the proposed pipeline has been compromised, and therefore, does not contribute to the eligibility of the affected trails in this area.

Because cultural resources that are not eligible for nomination to the National Register of Historic Places are not considered "historic properties," then by the Advisory Council's guidelines for Section 106 compliance there would be no adverse effect on any historic properties by the construction or maintenance of the proposed pipeline.

No impacts to traditional cultural properties are anticipated due to the absence of identified Native American tribal concerns.

4.11.2 No Action Alternative

Implementation of the No Action alternative would result in no additional impacts to cultural resources beyond those impacts that have already occurred from previous pipeline, road, utility lines, and other facility construction, and ongoing impacts from operations and maintenance of facilities and from livestock grazing activities.

4.11.3 Cumulative Impacts

Because cultural resources that are not eligible for nomination to the National Register of Historic Places are not considered "historic properties," then by the Advisory Council's guidelines for Section 106 compliance there would be no adverse effect on any historic properties by the construction or maintenance of the proposed pipeline.

4.12 SOCIOECONOMICS

4.12.1 Proposed Action

There would not be increased employment opportunities for the construction and operation of the proposed pipeline due to use of available existing pipeline workforce in the region. However, there would be increased tax revenues generated by the pipeline. Tax revenues are generally evaluated as positive impacts for an area.

There would be no influx of workers and their families into the area because the workers who designed and would construct the pipeline are current employees of MGR and residents of southwestern Wyoming. Therefore, the proposed pipeline would not place additional demands on schools and other governmental services.

It is unlikely that construction of the pipeline would generate high levels of concern, opposition, or dissatisfaction among local residents. The oil and gas industry is the primary revenue-generating activity in the area and provides employment opportunities for many local residents. This project is especially benign because of its proposed location parallel and adjacent to existing pipelines.

4.12.2 No Action Alternative

The possible beneficial effects of building the pipeline to employment opportunities in the area would not occur.

4.12.3 Cumulative Impacts

Construction of the pipeline would support the viability of the oil and gas industry, which provides a large part of the economic stability of southwestern Wyoming. Increased employment opportunities may occur in the region if energy production grows in the region supported by the proposed pipeline as a result of the increased capacity to bring the gas resource to market after the construction of the pipeline.

4.13 ENVIRONMENTAL JUSTICE

None of the counties affected by the proposed pipeline has a high proportion of minority or low income populations. Therefore, there would be no effects to environmental justice.

4.14 HAZARDOUS MATERIALS AND WASTE

4.14.1 Proposed Action

Hazardous materials used to construct the pipeline would be used on a temporary basis during the construction phase only. Natural gas transport through pipelines is regulated by federal and state regulations that ensure pipeline safety.

Hazardous materials needed to complete the pipeline construction would be contained in material transport containers or in vehicle fuel tanks. The possibility of chemical spills and releases increases as industrial development occurs; however, hazardous waste spills would be cleaned up by the responsible party to prevent endangering human health or incurring environmental damage and would be disposed of appropriately. The transport and use of hazardous materials is regulated by federal and state laws. Violation of these laws could result in adverse impacts to environmental resources. Illegal hazardous waste dumping or spills could damage these resources or totally remove vegetation from the immediate vicinity.

Project operations would apply with all applicable laws and regulations, including those procedures specified in its management plans. The applicant committed mitigation measures would ensure that non-hazardous wastes generated during pipeline construction would be managed appropriately. Therefore, hazardous materials management activities and waste management are not expected to adversely impact wildlife, vegetation, soils, water, the air, or any other environmental resource.

4.14.2 No Action Alternative

There would be no impacts from the use of hazardous materials or chemicals associated with the proposed pipeline. Hazardous materials would continue to be used in their current capacity in association with other industrial projects occurring in the area.

4.14.3 Cumulative Impacts

The incidental use of hazardous materials would not contribute to the cumulative impacts of the use of such materials.

CHAPTER 5

COORDINATION AND CONSULTATION

5.1 RECORD OF PERSONS, GROUPS, AND GOVERNMENTAL AGENCIES CONTACTED

5.1.1 Government and Tribal Offices

Sublette County Commissioners
Sublette County Planning and Development
Sweetwater County Commissioners
Sweetwater County Planning and Development
Governor, State of Wyoming
Northern Arapahoe Business Council
Shoshone Cultural Office
Shoshone Tribal Council
Shoshone-Bannock Tribes
Shoshone-Bannock Tribal Council
Ute Tribal Cultural Resources
Ute Tribe Business Committee
U.S. Army Corps of Engineers
U.S. Department of Energy
U.S. Fish and Wildlife Service
U.S. Natural Resources Conservation
U.S. Representative Barbara Cubin
U.S. Senator Craig Thomas
U.S. Senator Michael Enzi
USDI/Bureau of Land Management State Director
USDI/Bureau of Reclamation
USDI/Office of Environmental Policy and Compliance
Wyoming Department of Transportation
Wyoming Department of Environmental Quality
Wyoming Game and Fish Department
Wyoming State Clearinghouse, Office of Federal Land Policy
Wyoming Oil and Gas Conservation Commission
Wyoming SHPO
Wyoming State Representatives
Wyoming State Senators

5.1.2 Organizations

Animal Protection Institute of America
American Wind Energy Association
Biodiversity Associates
Defenders of Wildlife
Earth Justice Legal Fund
Ecology and Environment Inc.
Frontiers of Freedom - People for the USA
Greater Yellowstone Coalition
Humane Society of the US
National Wildlife Federation
Natural Resources Defense Council
Mormon Trails Association
National Pony Express Association
OCTA

People for the USA
People for Wyoming
Petroleum Association of Wyoming
Petroleum Information Corp.
Public Lands Advocacy
Safari Club International
Sierra Club Wyoming Chapter
Southwest Wyoming Mule Deer Foundation
Southwest Wyoming Industrial Assoc.
Southwest Wyoming Mineral Assoc.
The Nature Conservancy
The Wilderness Society
Trout Unlimited
Western Wyoming Mule Deer Foundation
Wyoming Advocates for Animals
Wyoming Association of Professional Archeologists
Wyoming Association of Professional Historians
Wyoming Association of Municipalities
Wyoming Business Alliance
Wyoming Outdoor Council
Wyoming Public Lands Council
Wyoming SHPO
Wyoming Sportsman's Association
Wyoming State Grazing Board Wyoming
Wildlife Federation
Wyoming Wool Growers Association

5.1.3 Industry

ABO Petro Corp.
American Cometra Inc.
Anadarko/RME Petroleum Corporation
Atofina Petrochemicals Inc.
Donald B Anderson LTD
AT&T
Bataa Oil Inc.
Belco Petroleum Corp.
Berco Resources LLC
Big West Oil & Gas Inc.
BP America Production Co.
BR
Bridger Valley Electric Assn.
Burlington Resources O&G Co LP
Cabot Oil & Gas Corp.
Caribam Resources Inc.
Chevron USA Inc.
Colorado Interstate Gas Co.
Crown Oil & Gas Co. Inc.
D & R Energy Program 1978
Debernardi Construction Co.
Duke Energy Field Services LP
Idaho Power Co.
Mark A. Chapman
Encana Energy Resources Inc.
Energen Resources Corp.
FMC Corporation
Energetics 88 LTD
EOG Resources Inc.
Exxon Company USA
Freeman Investments
General Chemical
Guaranty Energy Group 1981
FMC Wyoming Corporation
Forest Oil Corp.
Fuel Resources Dev Co.
Herbaly Petroleum Corp
Jonah Gas Gathering Co.
Jonah Energy Co. LLC
Kaiser-Francis Oil
Robert W. Kent
Key Production Co. Inc.
KG Metering & Operation
Lario Oil & Gas Co.
Legacy Energy Corp.
Lincoln Petroleum LTD
Marathon Oil Co.
Marshall & Winston Inc.
McMurray Oil Co.
Merit Energy Partnership LP
Mid-America Pipeline Co.
Mountain Gas Resources, Inc.

Mountain Gas Transportation, Inc.
Myco Industries Inc.
Nerd Gas Go LLC
Nortex Corp.
Northwest Exploration Co.
Northwest Pipeline Corporation
OCI Wyoming LP
Ocean Energy Inc.
Overland Trail Transmission LLC
Pacific Power & Light
Pacific Enterprises Oil Co. USA
Panhandle Eastern Pipeline
Petroleum Association of Wyoming
Pipeline Services of Wyoming
Pittsburg & Midway Mine
Questar Exploration & Production
Questar Gas Management Co.
Questar Pipeline Co.
Qwest Corporation
Rendezvous Gas Services
Samedan Oil Corp.
Seguro Oil & Gas Inc.
Schultz M Smithwick
Sinclair Oil Corporation
Stone Energy LLC
Solvay Minerals
Southwest Wyoming Industrial Association
Sovereign Investments Inc.
Stephen Smith Inc.
Texaco Exploration & Production Inc.
Toklan Oil & Gas Corp.
Tom Brown, Inc.
Westport Oil & Gas Co. LP
William G Helis Est.
Williams Gas Processing Company
Yates Drilling Co.
Lillie M Yates Est
Yates Petroleum Corp.
XTO Energy Inc.
XYZ, Inc.

5.1.4 Individuals/Permittees

Big Sandy and Green River Livestock Co.
Midland Dunton Sheep Company
Bruce E. and Margret B. Jones
Roberts Ranch Partnership
Jon Child
W & M Thoman Ranches, LLC
Argyles' Ranch, Inc.
Frank Fear Cattle Co.
C&D Enterprises, LLC
Dennis Hunzeker
Mike Sims
Victor Powers
JR Broadbent
David H. Thoman
Arnold Larson
R. Gunter Family Partnership
Leland Cattle Company
Charlotte Carlisle
Rodwell Ranch LLC
Ann Tujillo

5.2 LIST OF PREPARERS

5.2.1 O&G Environmental Consulting

Bonnie Carson	Project Management, EA Preparation
Richard Bell	EA Preparation, QA/QC
Chris Gayer	Biological Field Survey, EA Preparation
Andrew Fabian	Biological Field Survey, EA Preparation
Bea VanHorn	Document Coordination & Production, Editing
Joanne Bacalman	Document Production

5.2.2 ForeRunner Corporation

Richard Clift	Graphics

5.2.3 Western Archaeological Services

Jana Paster	Cultural Resources
Joni Stainbrook	Cultural Resources

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APPENDIX A

SCOPING LETTER AND LIST OF RECIPIENTS

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101

1791
Rendezvous EA

January 6, 2003

SCOPING NOTICE

MOUNTAIN GAS RESOURCES, INC. PROPOSED RENDEZVOUS PHASE IV 20" PIPELINE PROJECT

Dear Reader:

Mountain Gas Resources, Inc. (MGR) has notified the Bureau of Land Management (BLM), Rock Springs and Kemmerer Field Offices, of proposed plans to construct, operate and maintain a buried 20-inch diameter natural gas pipeline and related facilities between the Granger Gas Plant in the SE¼ of Section 16, T18N, R111W, 6th Principal Meridian (PM), Sweetwater County, Wyoming and a pipeline connection in the NE¼NE¼ of Section 34, T27N, R111W, 6th PM, Sublette County, Wyoming. The enclosed document serves as notice of the beginning of the environmental analysis process to fulfill the requirements of the National Environmental Policy Act (NEPA). An environmental assessment will be prepared for this proposal. Should the environment assessment process reveal the potential for significant impacts, an Environmental Impact Statement (EIS) will be prepared.

If you have concerns, issues, or alternatives you would like to see addressed, please respond with your written comments by February 10, 2003. Send written comments to:

Kelly Lamborn, NEPA Coordinator
Kemmerer Field Office
312 Highway 189 North
Kemmerer, WY 83101

Enclosed with this scoping notice is a notification card. If you would like to receive a copy of the environmental document, please return the card. If you have questions regarding the project proposal or the NEPA process, please contact Kelly Lamborn at (307) 828-4505.

Sincerely,

FOR Jeff Rawson
Field Manager

Enclosure: Scoping Notice

SCOPING NOTICE

Mountain Gas Resources, Inc.
Rendezvous Phase IV 20" Pipeline Project

Bureau of Land Management
Rock Springs Field Office
Kemmerer Field Office

Description of Project

Mountain Gas Resources, Inc. (MGR), a subsidiary of Western Gas Resources, Inc. of Denver, Colorado, has notified the Bureau of Land Management (BLM), Rock Springs and Kemmerer Field Offices that MGR proposes to construct, operate, and maintain a buried 20-inch diameter natural gas pipeline and related facilities between the Granger Gas Plant in the SE¼ of Section 16, T18N, R111W, 6th Principal Meridian (PM), Sweetwater County, Wyoming and a pipeline connection in the NE¼NE¼ of Section 34, T27N, R111W, 6th PM, Sublette County, Wyoming. Related above ground facilities include valves, pigging equipment, side taps, and metering equipment. No compression facilities are needed for the proposed Rendezvous Phase IV 20" Pipeline Project. The proposed pipeline would connect an existing natural gas plant with an existing pipeline at the Bird Canyon Compressor Station. This connection would allow MGR more flexibility in meeting delivery needs.

The proposed pipeline would be constructed parallel and adjacent to existing pipelines within an existing pipeline corridor for its entire length of approximately 291,560 feet (55 miles). Approximately 224,380 feet (42 miles) of the proposed pipeline's right-of-way (ROW) cross federal lands administered by the BLM. The remaining lands are state and private lands, and the ownership pattern is checkerboard south of the Green River crossing and mostly federal north of the river.

The proposed pipeline would cross State Highway 30 in NW¼NW¼ of Section 28, T19N, R111W, Sweetwater County, Wyoming on private land. The Emigrant Trail, the Union Pacific Railroad line, and the Blacks Fork River would be crossed in SW¼NW¼ of Section 28, T19N, R111W on private land. The existing pipelines in the corridor and the Exxon Road would be crossed in SW¼NW¼ of Section 34, T23N, R111W, Sweetwater County, Wyoming on federal land. The Green River would be crossed in SW¼ of Section 16, T23N, R111W, on state land.

MGR has requested a 70-foot wide corridor for construction and a 50-foot wide permanent ROW for operational and maintenance purposes. Staging areas 20-feet wide by 100 feet in length would be required for construction on both sides of road and stream crossings, in rugged terrain, and other areas as dictated by site-specific conditions. The construction ROW width at these staging areas would be increased to a total of 90 feet. Workspace of 150 feet by 300 feet on each side of State Highway 30, the Black Fork River and Union Pacific Railroad line, and the Green River for horizontal directional drill (HDD) operations would be required and would increase the width of the construction ROW at these locations to 150 feet.

Cathodic test stations would be installed at all crossings of existing pipelines, on one side of all road bores, both sides of horizontal directional drills, and at least every one mile along the proposed pipeline. The pipeline would be hydrostatically pressure tested after the pipeline is completed. Test water would likely be obtained from the Blacks Fork and Green River. The withdrawal and discharge of the test waters would be conducted in compliance with all applicable state and federal requirements.

An environmental assessment (EA) is being prepared by the applicant for the proposed project. The EA will disclose the direct, indirect, and cumulative effects of the Proposed Action and alternatives for the construction and operation of the proposed Rendezvous Phase IV Pipeline. The EA will be submitted to the BLM Rock Springs and Kemmerer Field Offices for review and approval. Pipeline construction would begin as soon as all permits and ROW have been secured, a *Notice to Proceed* is obtained from the BLM, biological stipulations controlling access are met, and weather conditions permit. Construction is anticipated to take approximately three months.

Relationship to Existing Plans and Documents

Documents that direct management of BLM-administered lands within the analysis area are the Record of Decision for the Green River Resource Management Plan (RMP), dated August 8, 1997, and the Record of Decision for the Kemmerer RMP, dated April 29, 1986. These management plans provide for land use guidance for development of oil and gas reserves, including transmission of hydrocarbons to distribution points by pipelines. The proposed Rendezvous Phase IV Pipeline Project is in conformance with both RMPs. The environmental analysis that will be prepared on this project will incorporate appropriate decisions, terms, and conditions of use described in the RMPs.

Identified Resource Management Issues, Concerns, and Opportunities

The following issues and concerns have been identified by the BLM to date. It is not meant to be an all-inclusive list, but rather a starting point for public input and a means of identifying the resource disciplines to be addressed in the analysis. Land and resource management issues and concerns associated with pipeline construction and operation include:

- Potential impacts to wildlife habitats within the analysis area, including big game, sage grouse, Threatened and Endangered, Proposed, and Candidate species (mountain plover, prairie dogs/black-footed ferrets), and raptors.

- Threatened and Endangered and Candidate plant species.

- Road development, increased traffic and associated impacts on existing County, State, and BLM roads.

- Social and economic impacts to local communities.
- Impacts to surface waters, groundwater, and riparian and wetland areas, including depletions from the Colorado River system.
- Potential impacts to sensitive soils within the analysis area.
- Potential impacts to paleontological values within the analysis area.
- Reclamation of disturbed areas and control of noxious weed invasions.
- Potential conflicts with land uses including recreation and livestock management operations in the analysis area, including possible impacts to range improvements.
- Potential impacts to cultural and historical values within the analysis area.
- Cumulative effects of this proposed project and other ongoing or planned energy-related activities in the vicinity of the proposed pipeline.

Public Participation

The purpose of this notice is to invite the public to comment on the proposed Rendezvous Phase IV Pipeline Project early in the EA preparation process so that all relevant issues can be addressed in the EA. Your comments must be postmarked no later than February 10, 2003. Please send your written comments to:

Address: Kelly Lamborn, NEPA Coordinator
BLM – Kemmerer Field Office
312 Highway 189 North
Kemmerer, WY 83101
E-mail address: kemmerer_wymail@blm.gov

Should you not submit written comments, but wish to remain on the mailing list for the Rendezvous Phase IV Pipeline Project; please complete the enclosed pre-addressed card and return by February 10, 2003. Thank you for your interest in this project.

The following individuals and organizations will receive a copy of this scoping statement:

Government and Tribal Offices:
Sublette County Commissioners
Sublette County Planning and Development
Sweetwater County Commissioners

Sweetwater County Planning and Development
Governor, State of Wyoming
Northern Arapahoe Business Council
Shoshone Cultural Office
Shoshone Tribal Council
Shoshone-Bannock Tribes
Shoshone-Bannock Tribal Council
Ute Tribal Cultural Resources
Ute Tribe Business Committee
U.S. Army Corps of Engineers
U.S. Department of Energy
U.S. Fish and Wildlife Service
U.S. Natural Resources Conservation
U.S. Representative Barbara Cubin
U.S. Senator Craig Thomas
U.S. Senator Michael Enzi
USDI/Bureau of Land Management State Director
USDI/Bureau of Reclamation
USDI/Office of Environmental Policy and Compliance
Wyoming Department of Transportation
Wyoming Department of Environmental Quality
Wyoming Game and Fish Department
Wyoming State Clearinghouse, Office of Federal Land Policy
Wyoming Oil and Gas Conservation Commission
Wyoming SHPO
Wyoming State Representatives
Wyoming State Senators

ORGANIZATIONS

Animal Protection Institute of America
American Wind Energy Association
Biodiversity Associates
Defenders of Wildlife
Earth Justice Legal Fund
Ecology and Environment Inc.
Frontiers of Freedom - People for the USA
Greater Yellowstone Coalition
Humane Society of the US
National Wildlife Federation
Natural Resources Defense Council
Mormon Trails Association
National Pony Express Association
OCTA
People for the USA
People for Wyoming
Petroleum Association of Wyoming

Petroleum Information Corp
Public Lands Advocacy
Safari Club International
Sierra Club Wyoming Chapter
Southwest Wyoming Mule Deer Foundation
Southwest Wyoming Industrial Assoc
Southwest Wyoming Mineral Assoc
The Nature Conservancy
The Wilderness Society
Trout Unlimited
Western Wyoming Mule Deer Foundation
Wyoming Advocates for Animals
Wyoming Association of Professional Archeologists
Wyoming Association of Professional Historians
Wyoming Association of Municipalities
Wyoming Business Alliance
Wyoming Outdoor Council
Wyoming Public Lands Council
Wyoming SHPO
Wyoming Sportsman's Association
Wyoming State Grazing Board
Wyoming Wildlife Federation
Wyoming Wool Growers Association

INDUSTRY
ABO Petro Corp.
American Cometra Inc.
Anadarko/RME Petroleum Corporation
Atofina Petrochemicals Inc.
Donald B Anderson LTD
AT&T
Bataa Oil Inc.
Belco Petroleum Corp.
Berco Resources LLC
Big West Oil & Gas Inc.
BP America Production Co.
BR
Bridger Valley Electric Assn.
Burlington Resources O&G Co LP
Cabot Oil & Gas Corp.
Caribam Resources Inc.
Chevron USA Inc.
Colorado Interstate Gas Co.
Crown Oil & Gas Co. Inc.
D & R Energy Program 1978
Debernardi Construction Co.

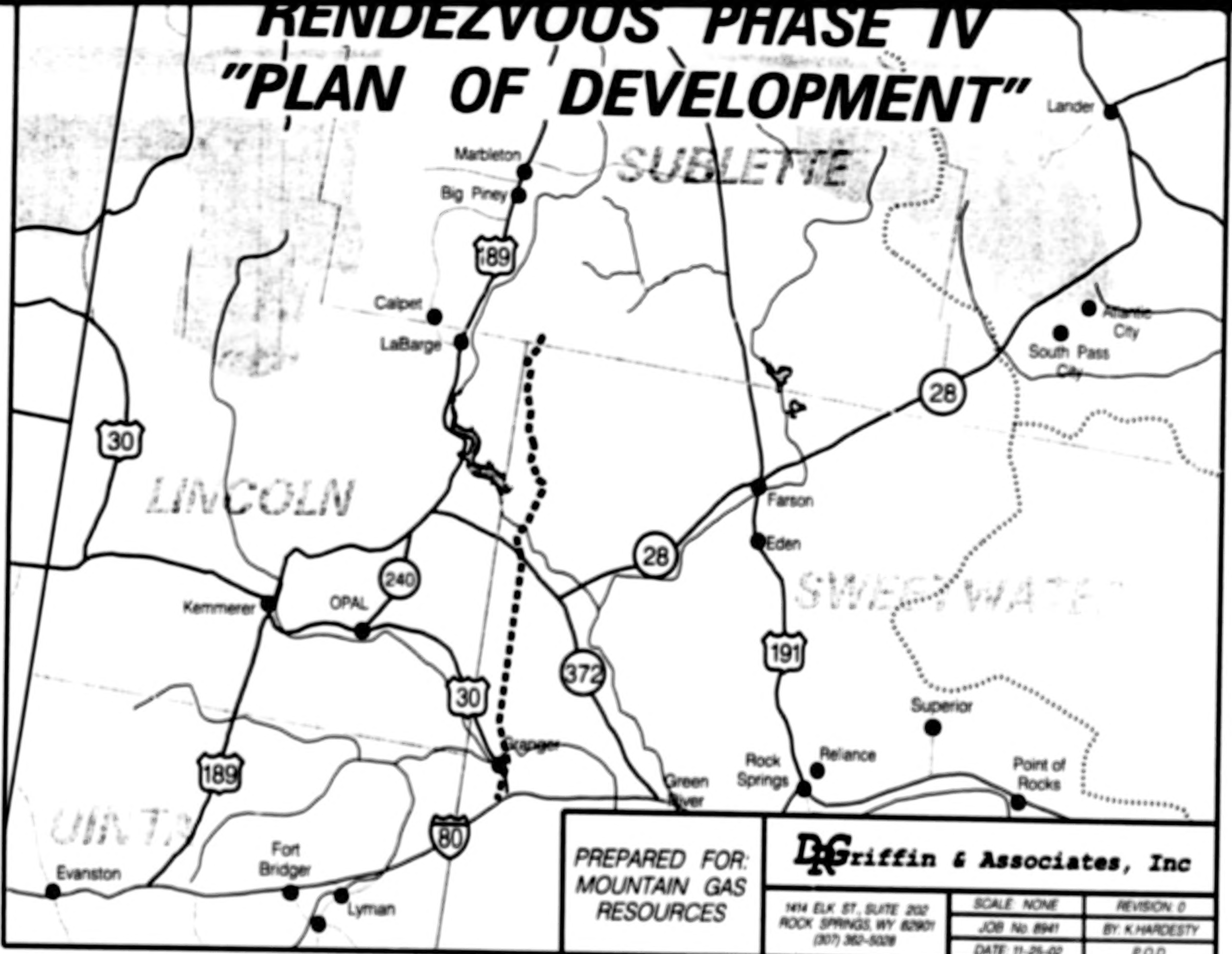
Duke Energy Field Services LP
Idaho Power Co.
Mark A Chapman
Encana Energy Resources Inc.
Energen Resources Corp.
FMC Corporation
Energetics 88 LTD
EOG Resources Inc.
Exxon Company USA
Freeman Investments
General Chemical
Guaranty Energy Group 1981
FMC Wyoming Corporation
Forest Oil Corp.
Fuel Resources Dev Co.
Herbaly Petroleum Corp
Jonah Gas Gathering Co
Jonah Energy Co LLC
Kaiser-Francis Oil
Robert W. Kent
Key Production Co Inc.
KC Metering & Operation
Lario Oil & Gas Co
Legacy Energy Corp.
Lincoln Petroleum LTD
Marathon Oil Co.
Marshall & Winston Inc
McMurray Oil Co.
Merit Energy Partnership LP
Mid-America Pipeline Co.
Mountain Gas Resources, Inc.
Mountain Gas Transportation, Inc.
Myco Industries Inc.
Nerd Gas Co LLC
Nortex Corp.
Northwest Exploration Co.
Northwest Pipeline Corporation
OCI Wyoming LP
Ocean Energy Inc.
Overland Trail Transmission LLC
Pacific Power & Light
Pacific Enterprises Oil Co. USA
Panhandle Eastern Pipeline
Petroleum Association of Wyoming
Pipeline Services OC Wyoming
Pittsburg & Midway Mine

Questar Exploration & Production
Questar Gas Management Co
Questar Pipeline Co
Qwest Corporation
Rendezvous Gas Services
Samdan Oil Corp.
Seguaro Oil & Gas Inc.
Schultz M Smithwick
Sinclair Oil Corporation
Stone Energy LLC
Solvay Minerals
Southwest Wyoming Industrial Association
Sovereign Investments Inc.
Stephen Smith Inc.
Texaco Exploration & Production Inc.
Toklan Oil & Gas Corp
Tom Brown, Inc.
Ann Tujillo
Westport Oil & Gas Co. LP
William G Helis Est.
Williams Gas Processing Company
Yates Drilling Co
Lillie M Yates Est
Yates Petroleum Corp
XTO Energy Inc.
XYZ, Inc.

INDIVIDUALS/PERMITTEES
Big Sandy and Green River Livestock Co
Midland Dunton Sheep Company
Bruce E and Margret B Jones
Roberts Ranch Partnership
Jon Child
W & M Thoman Ranches, LLC
Argyles' Ranch, Inc.
Frank Fear Cattle Co
C&D Enterprises, LLC
Dennis Hunzeker
Mike Sims
Victor Powers
JR Broadbent
David H. Thoman
Arnold Larson
R. Gunter Family Partnership
Leland Cattle Company
Charlotte Carlisle

Rodwell Ranch LLC

RENDEZVOUS PHASE IV "PLAN OF DEVELOPMENT"



PREPARED FOR:
MOUNTAIN GAS
RESOURCES

DRGriffin & Associates, Inc

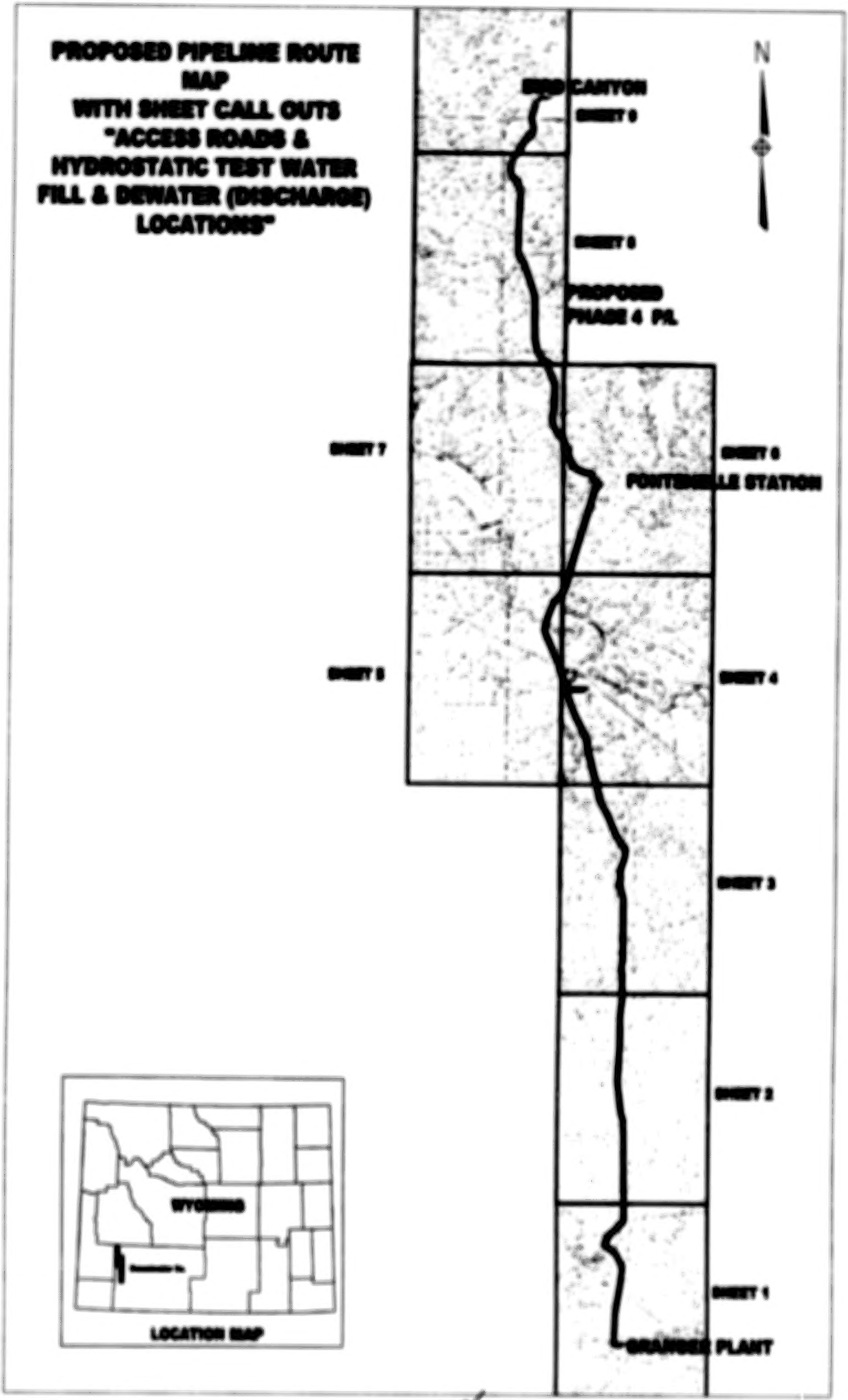
1414 ELK ST., SUITE 202
ROCK SPRINGS, WY 82901
(307) 362-5028

SCALE: NONE	REVISION: 0
JOB No. 8941	BY: K.HARDESTY
DATE: 11-25-02	P.O.D.

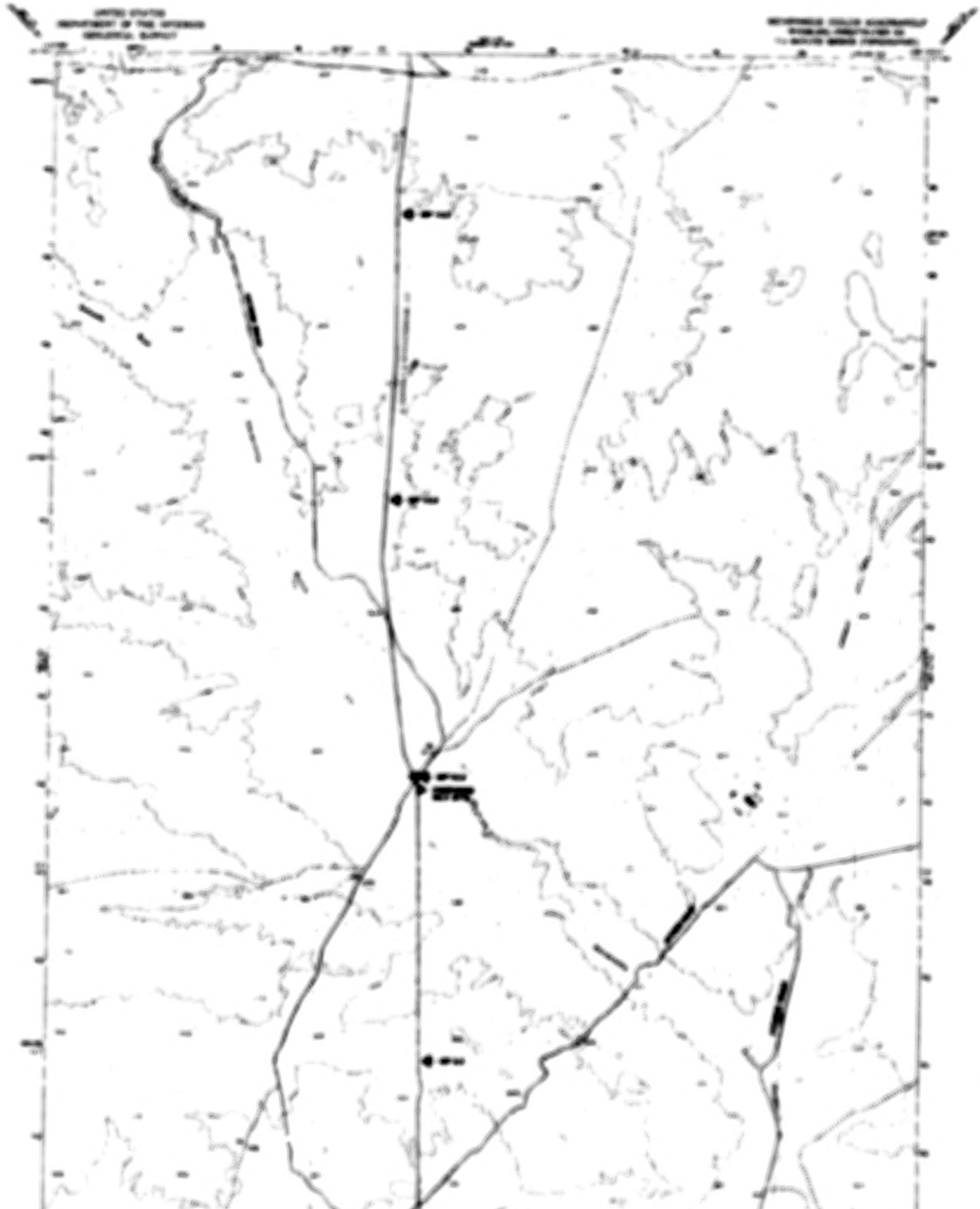
APPENDIX B

MAPS SHOWING ACCESS ROADS AND HYDROSTATIC TEST WATER FILL AND DEWATER (DISCHARGE) LOCATIONS

PROPOSED PIPELINE ROUTE MAP WITH SHEET CALL OUTS "ACCESS ROADS & HYDROSTATIC TEST WATER FILL & DEWATER (DISCHARGE) LOCATIONS"

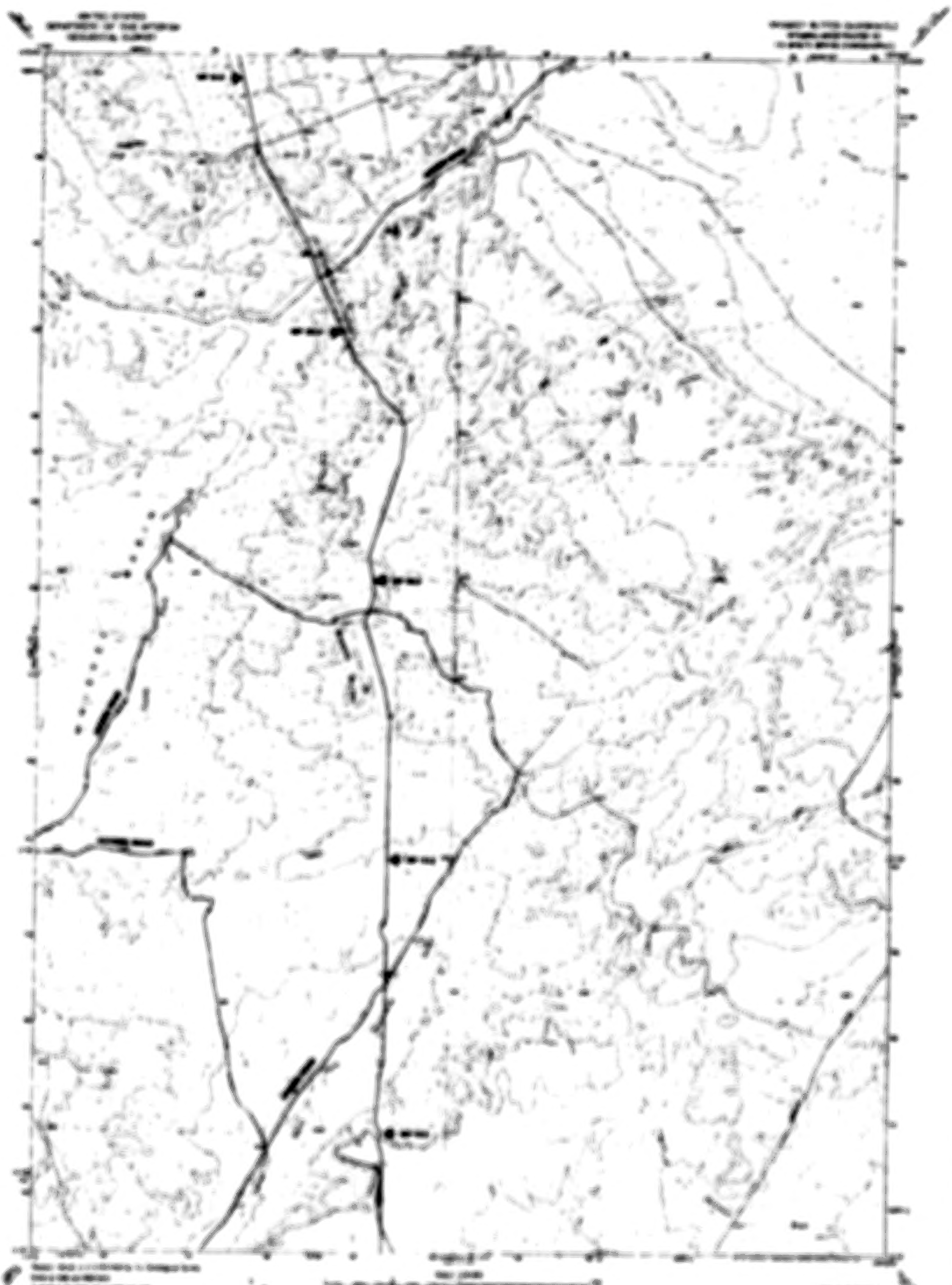


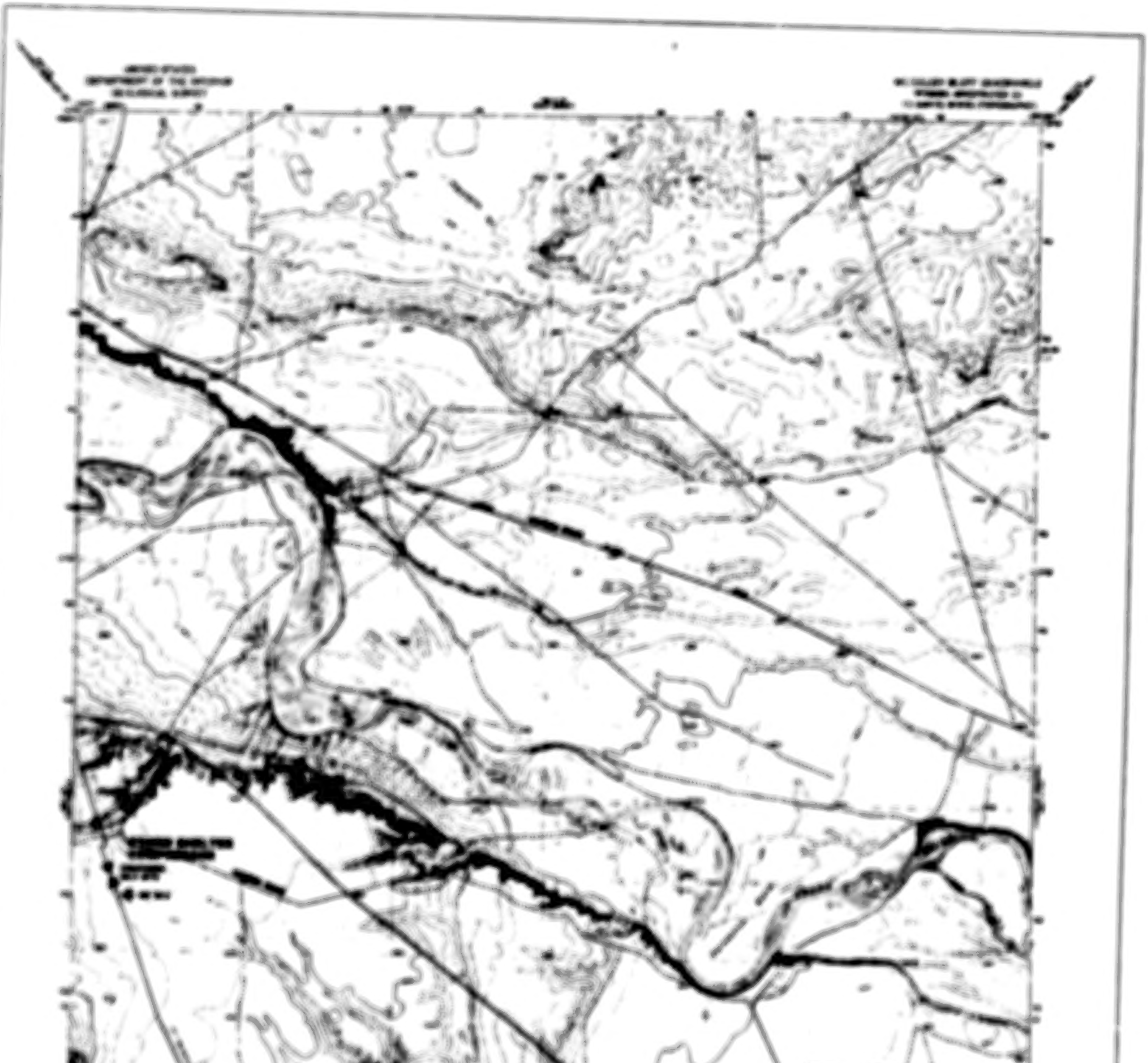
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

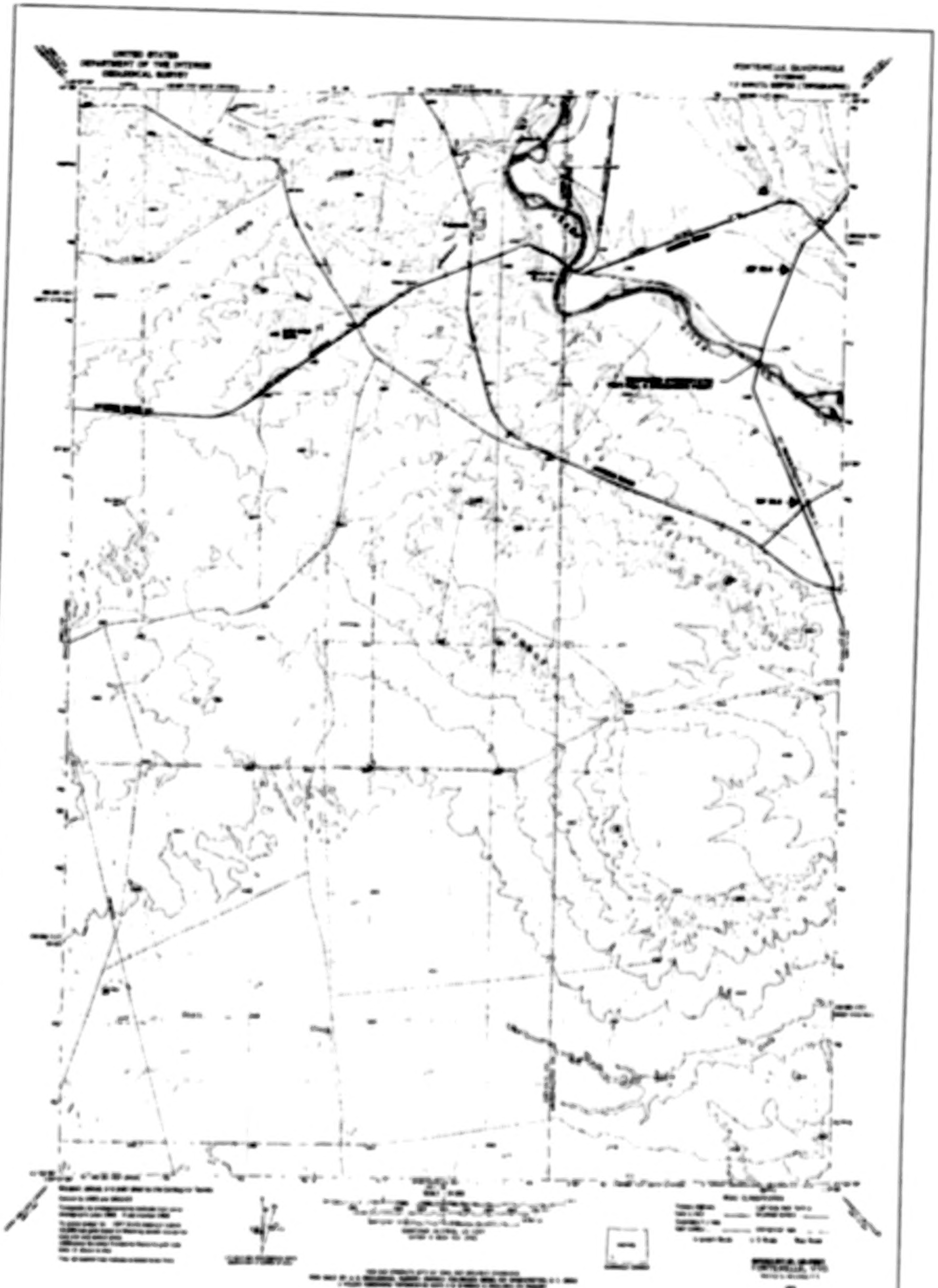


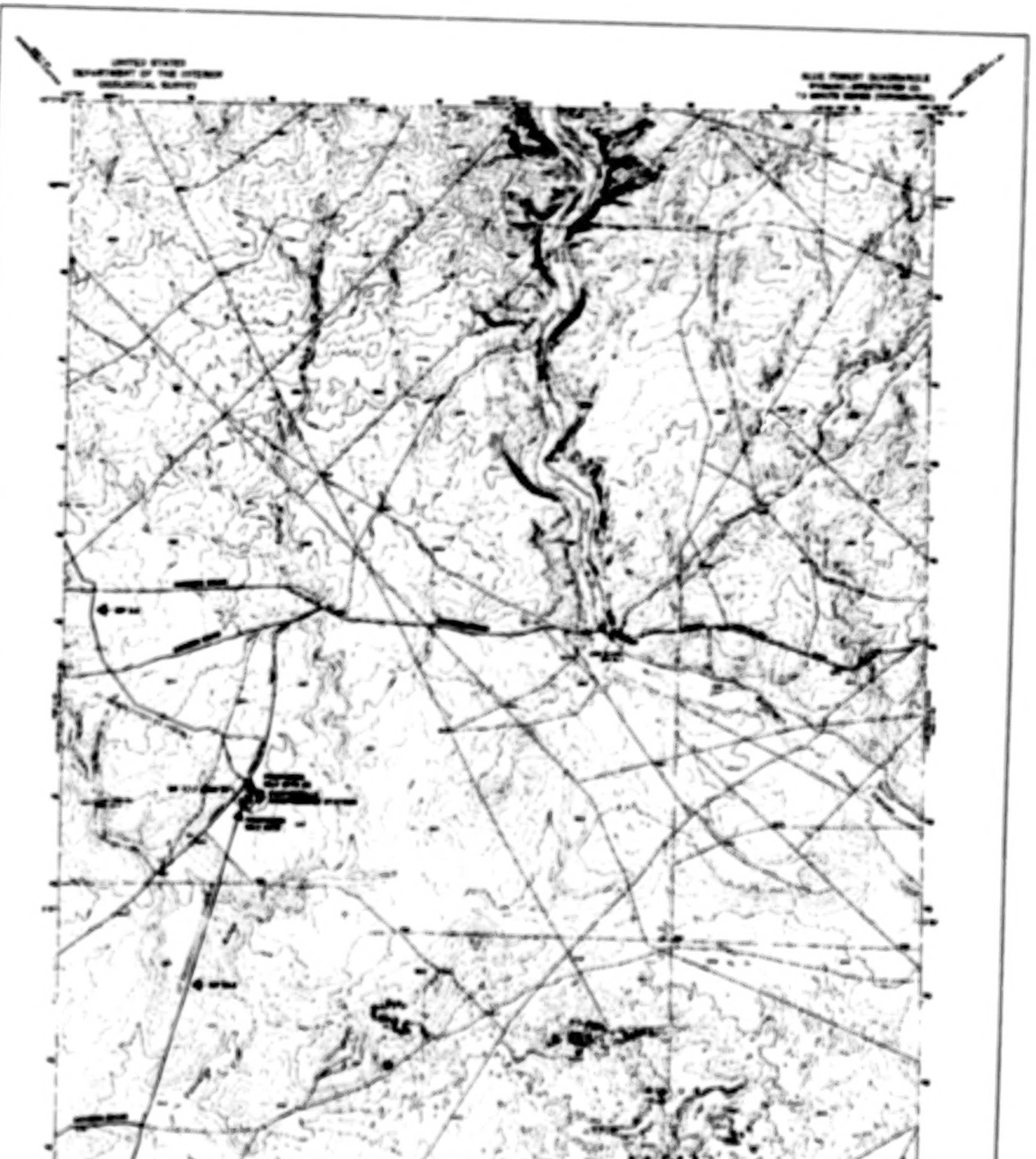
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

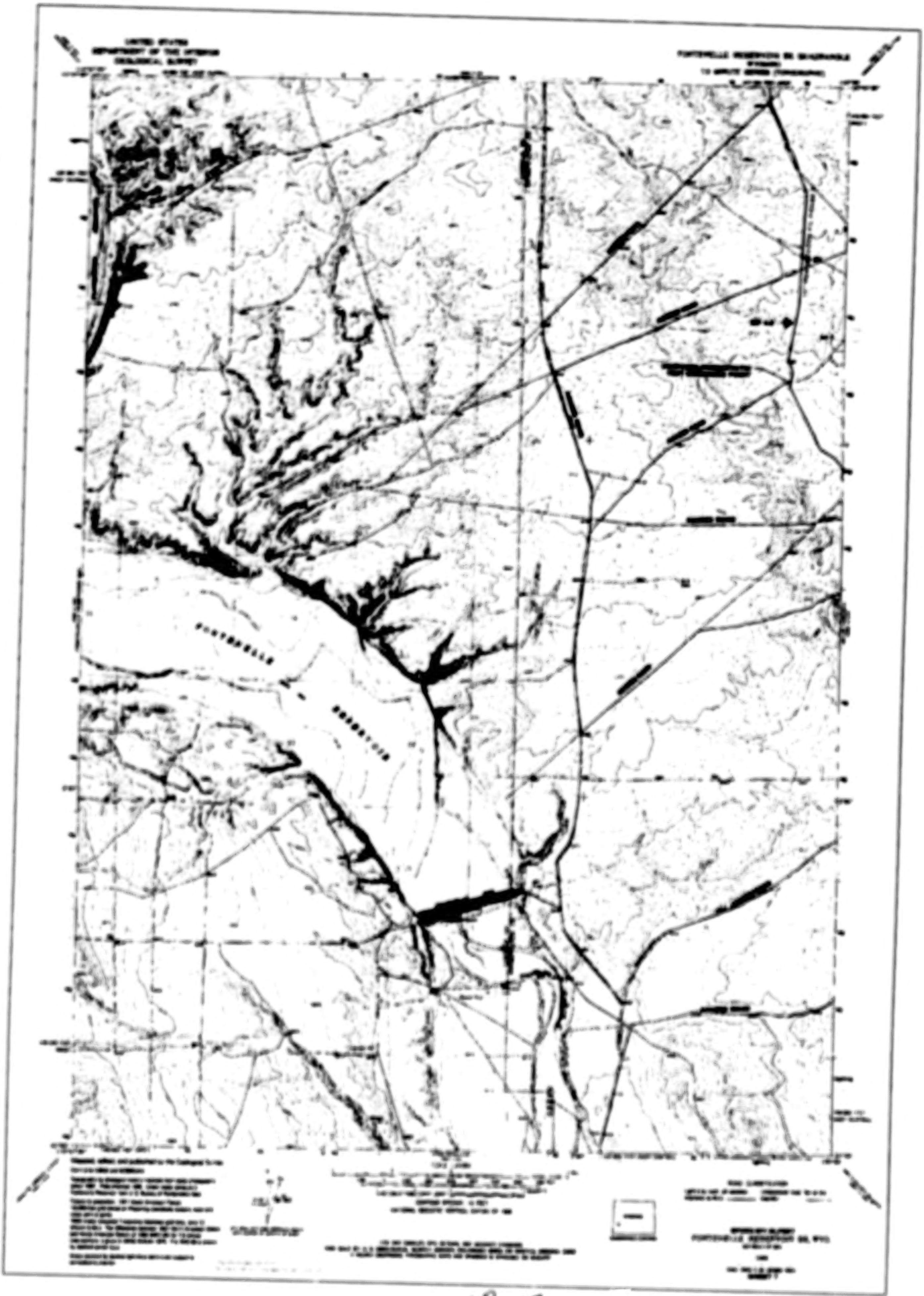
120

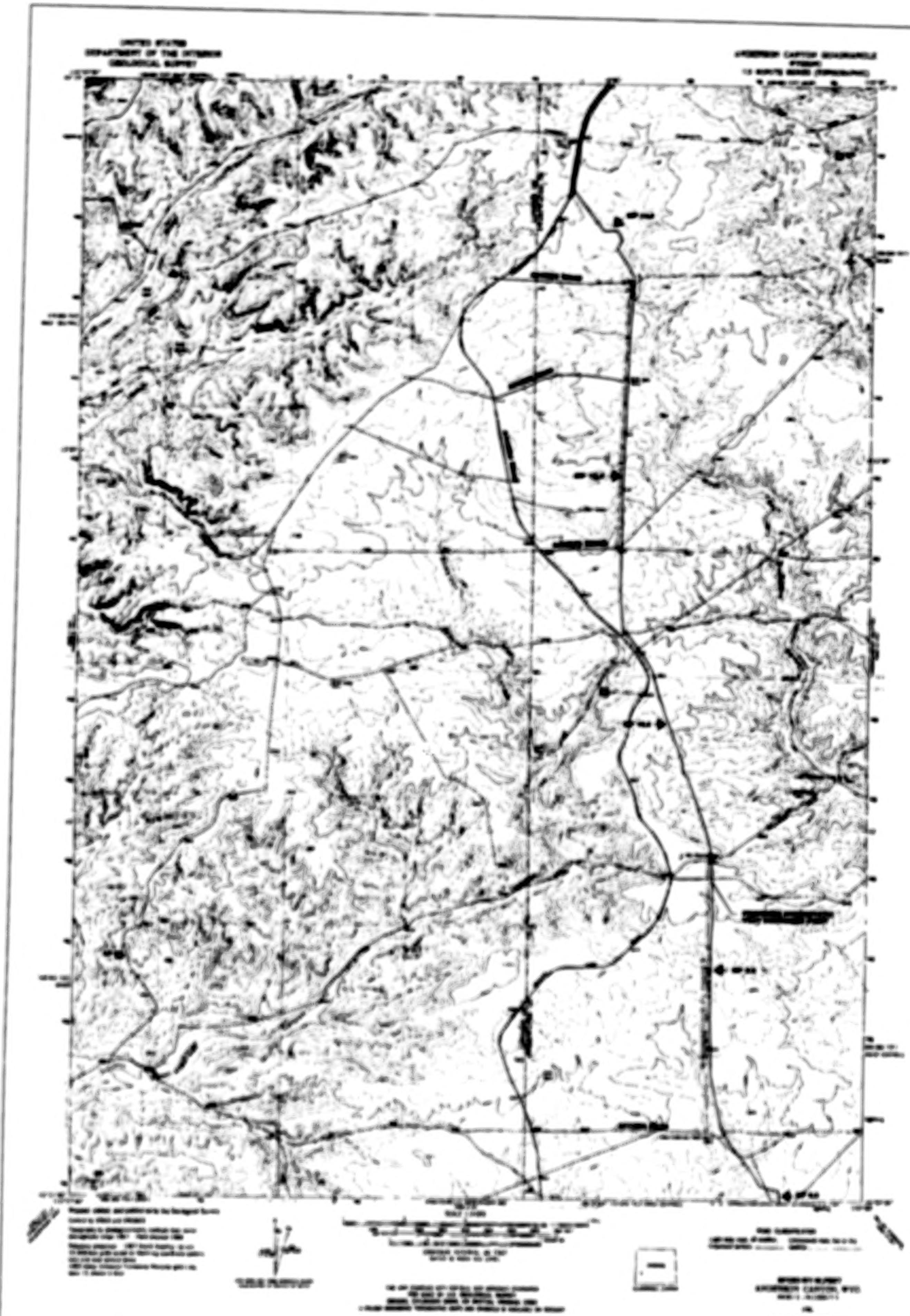


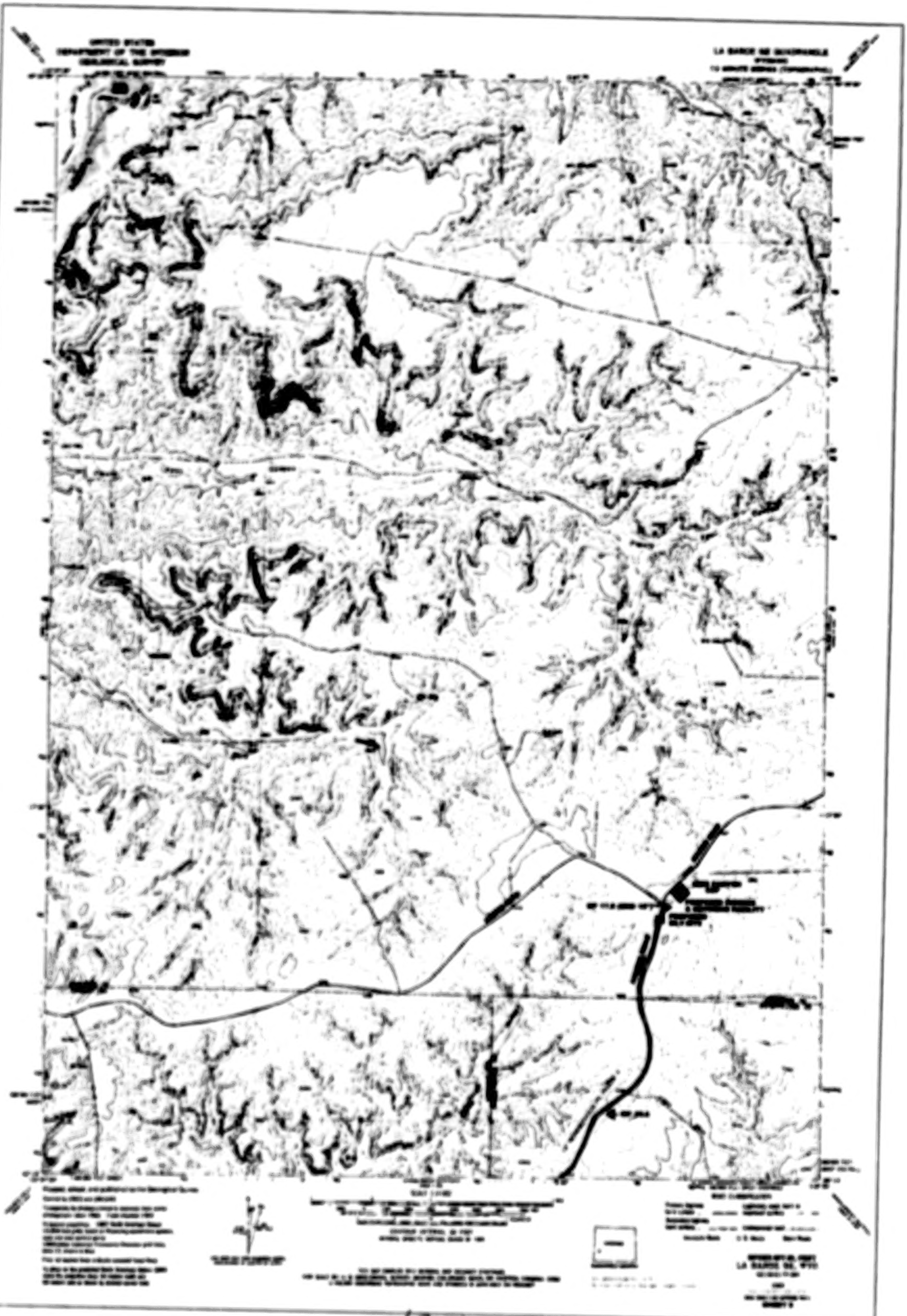



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

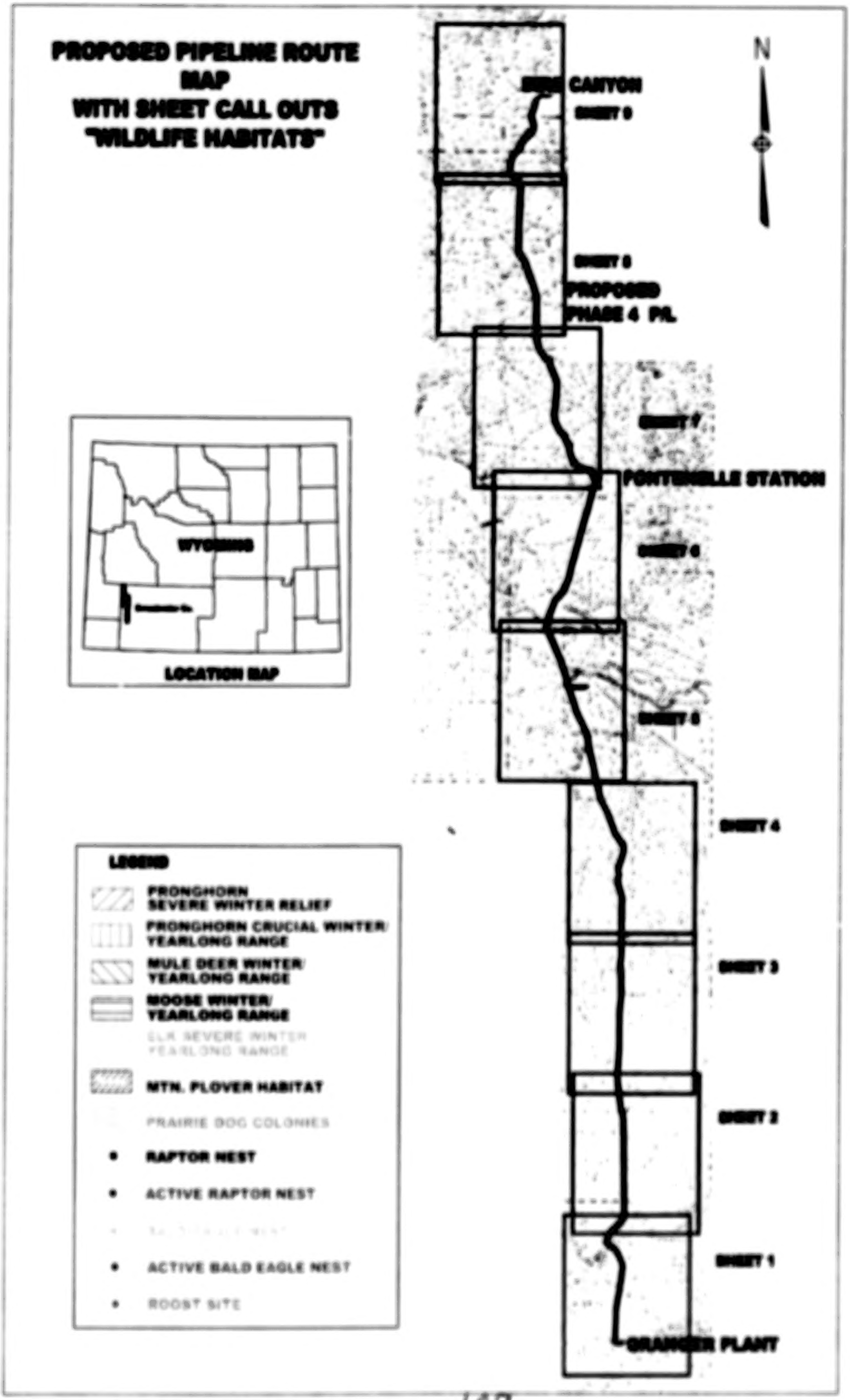



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

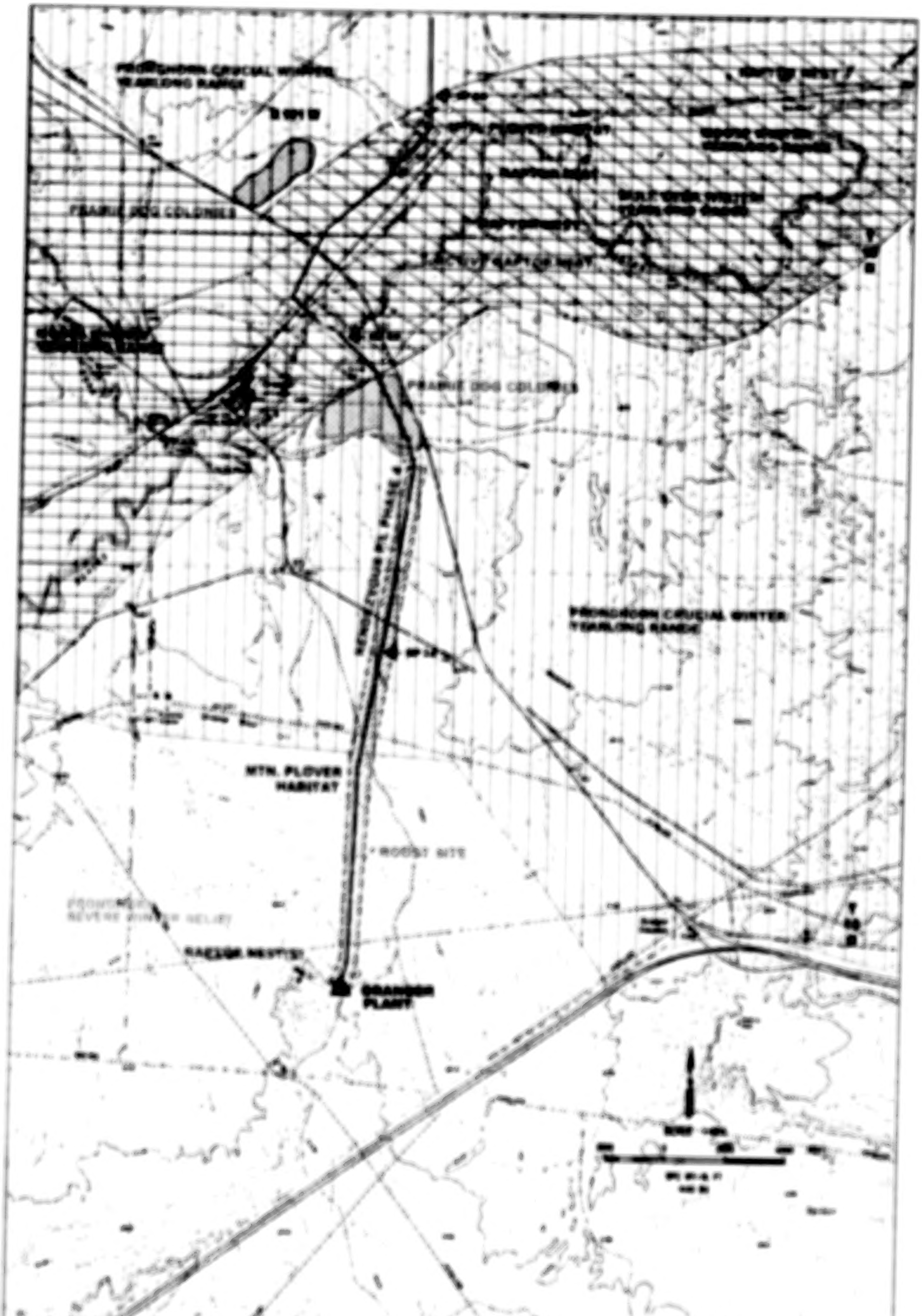


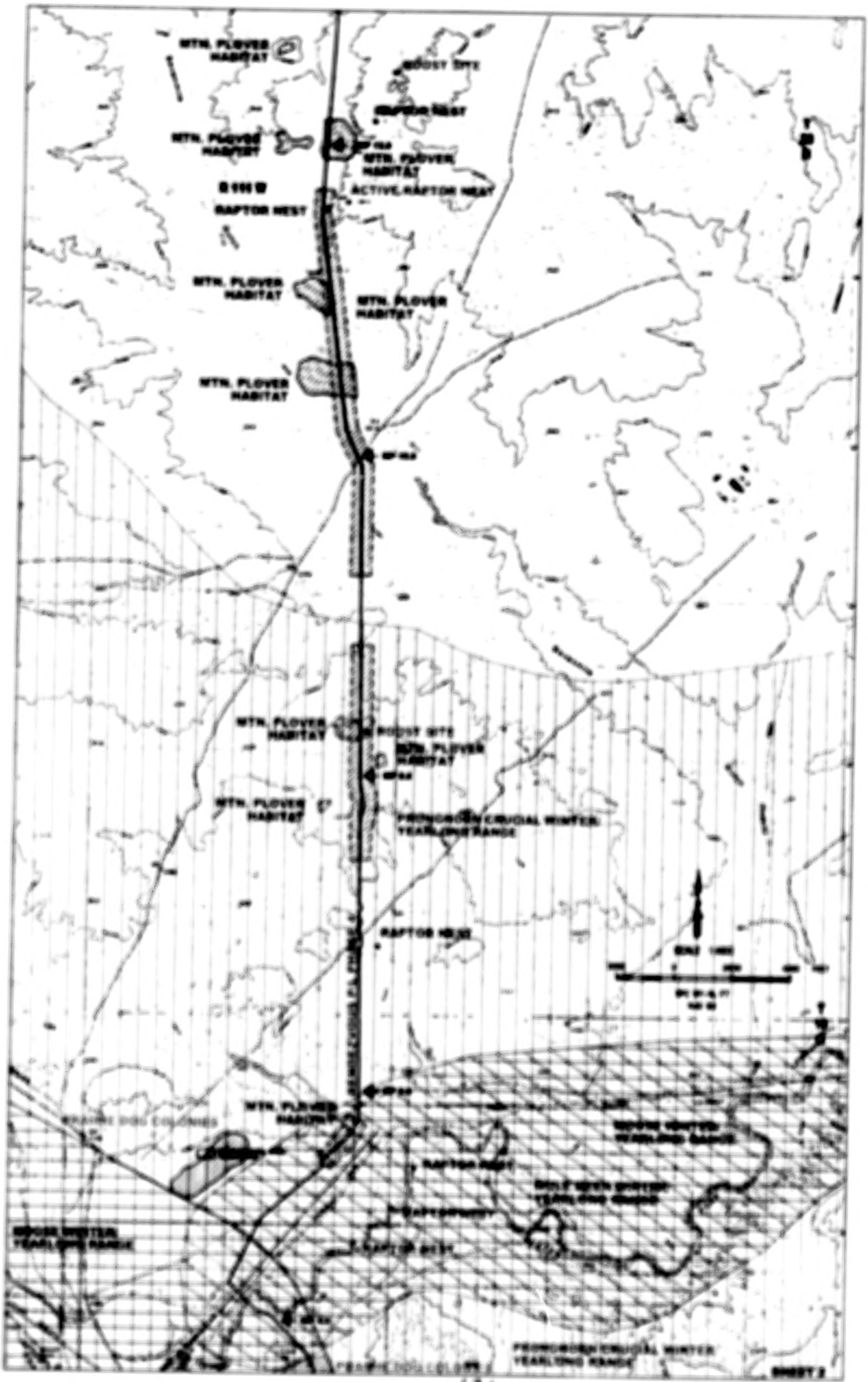
APPENDIX C

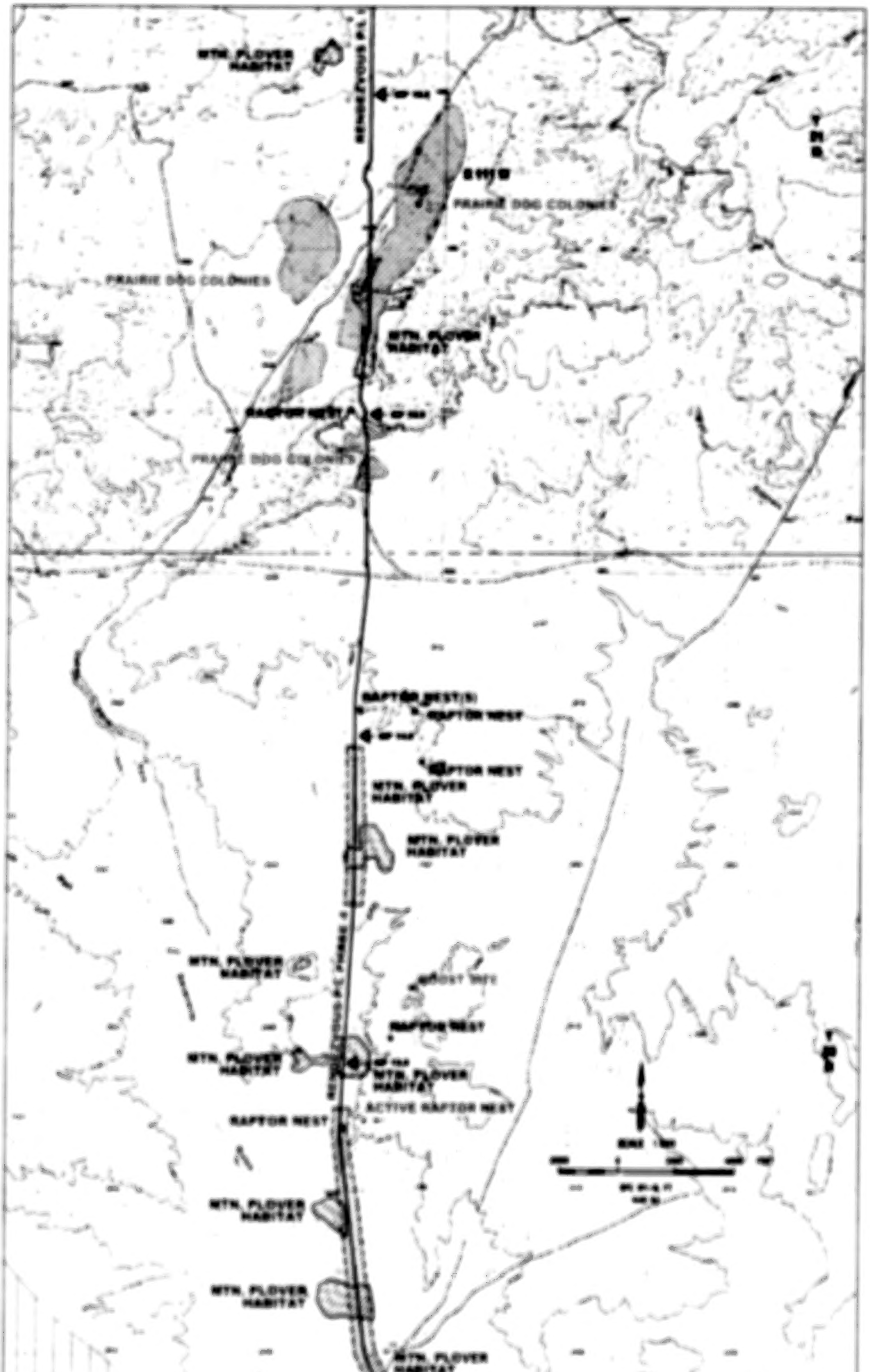
MAPS SHOWING ANIMAL SPECIES OF CONCERN, HABITAT AND LOCATIONS

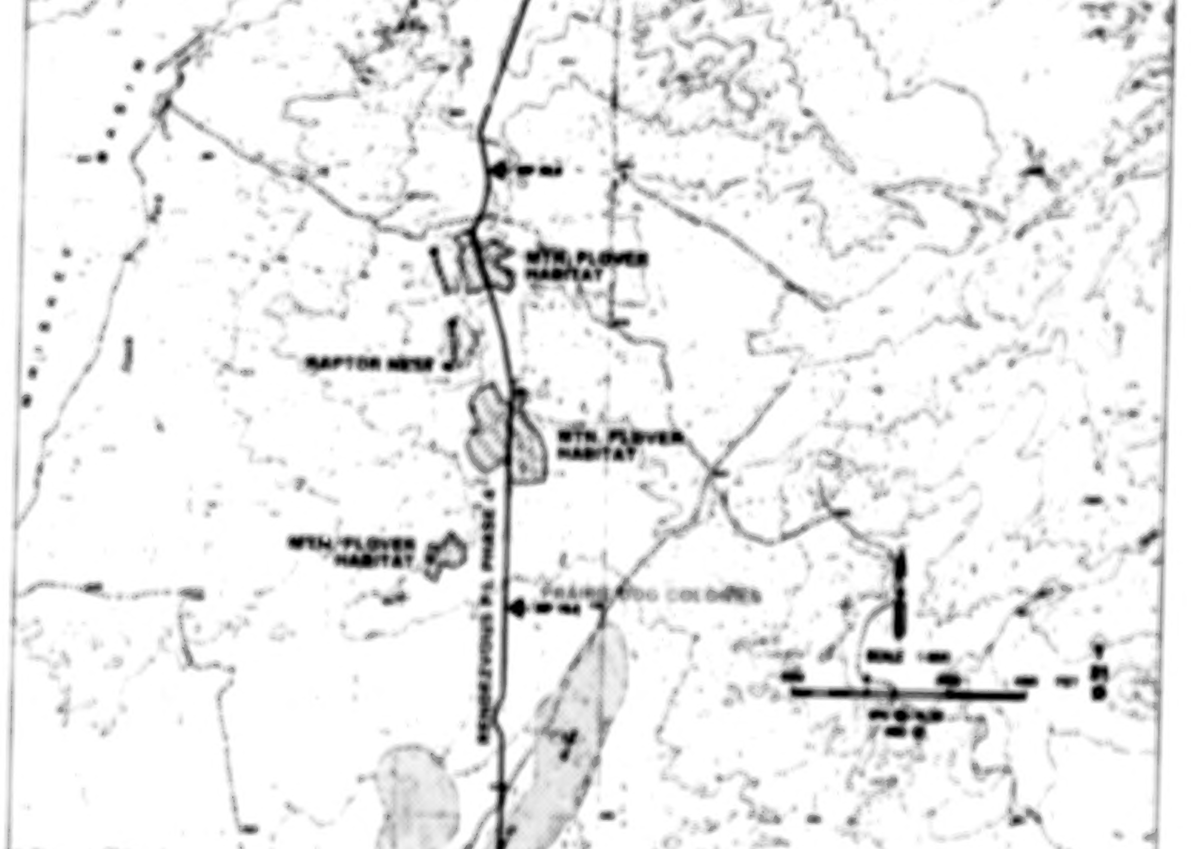


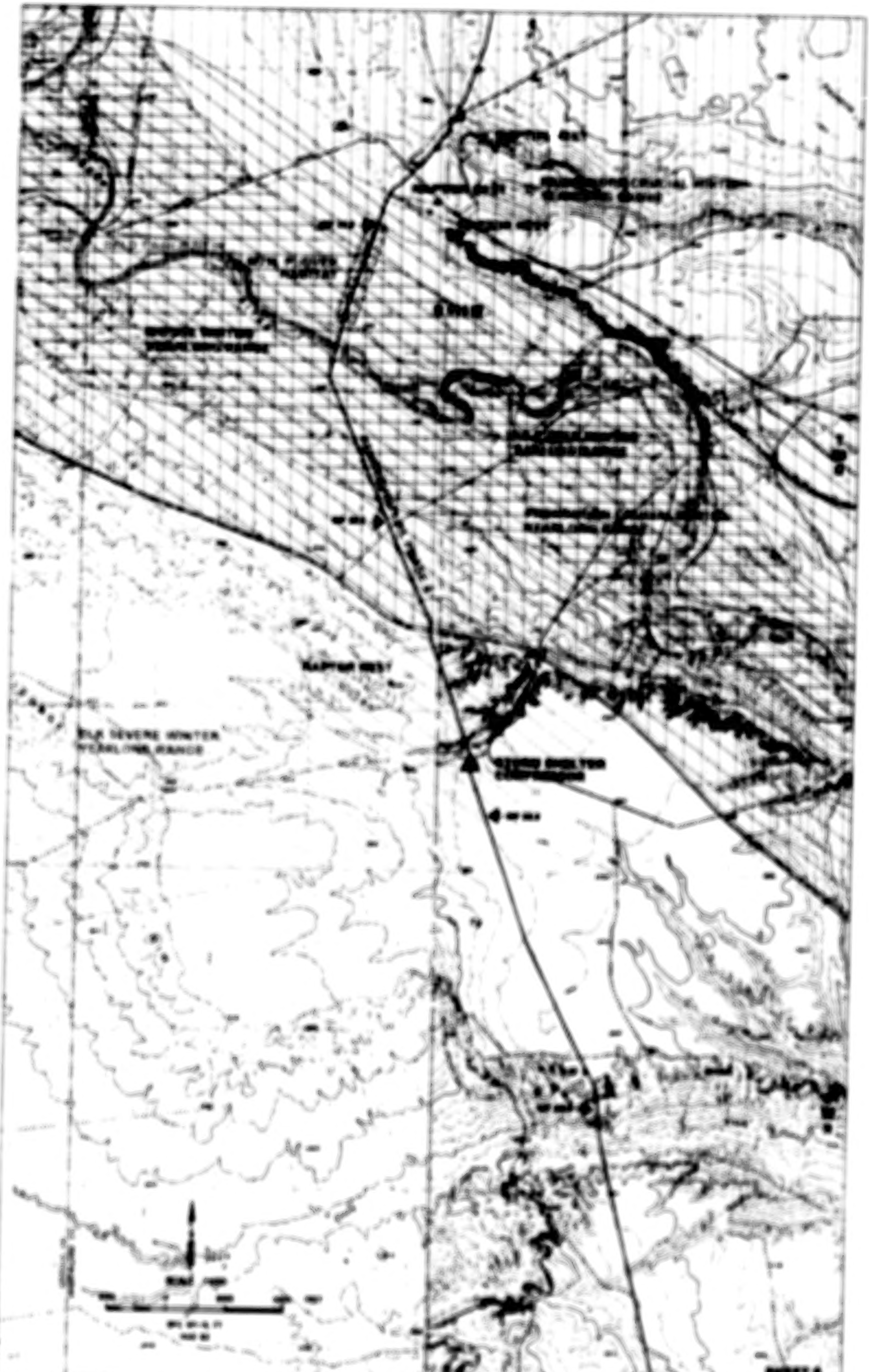
PROPOSED PIPELINE ROUTE
MAP
WITH SHEET CALL OUTS
"WILDLIFE HABITATS"

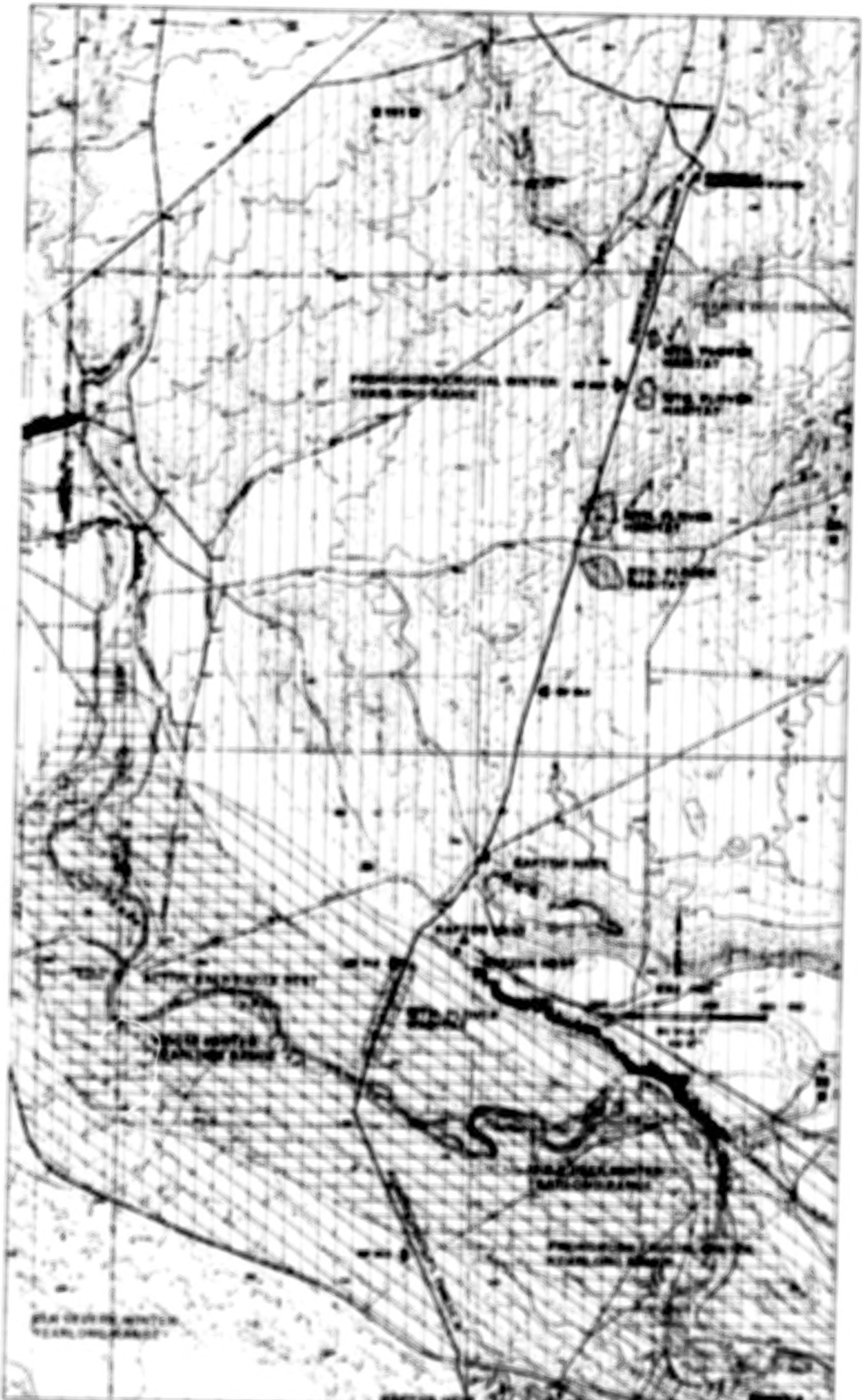

PRONGHORN CRUCIAL WINTER YEARLONG RANGE
PRAIRIE DOG COLONIES
PRAIRIE DOG COLONIES
PRONGHORN CRUCIAL WINTER YEARLONG RANGE
MTN. PLOVER HABITAT
ROOST SITE
PRONGHORN SEVERE WINTER RELIEF
RAPTOR NEST(S)
GRANGER PLANT
SHEET 4

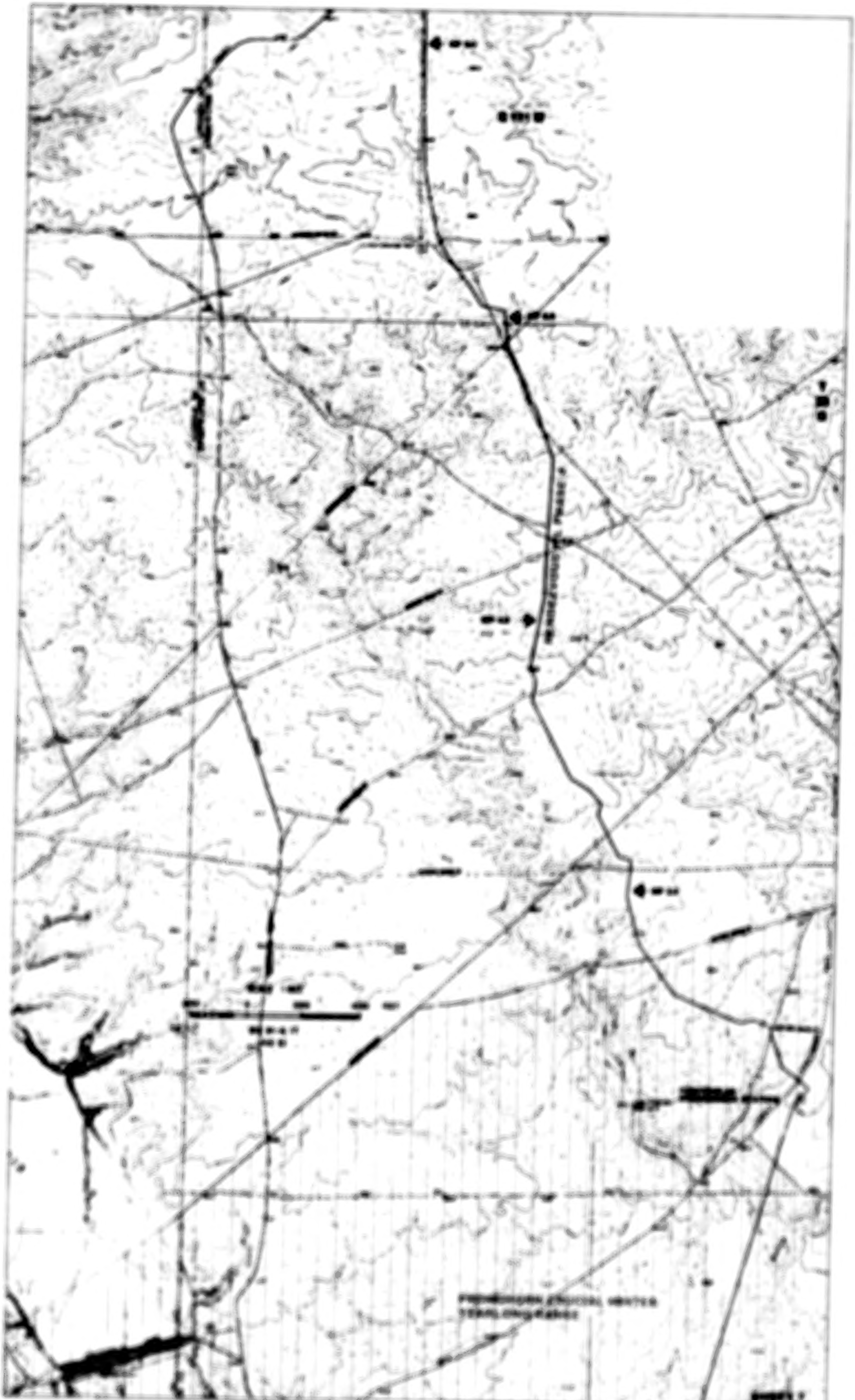

MTN. PLOVER HABITAT
ROOST SITE
RAPTOR NEST
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
ACTIVE RAPTOR NEST
RAPTOR NEST
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
ROOST SITE
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
PRONGHORN CRUCIAL WINTER YEARLONG RANGE
RAPTOR NEST
MTN. PLOVER HABITAT
PRAIRIE DOG COLONIES
RAPTOR NEST
RAPTOR NEST
PRAIRIE DOG COLONIES
PRONGHORN CRUCIAL WINTER YEARLONG RANGE
SHEET 2

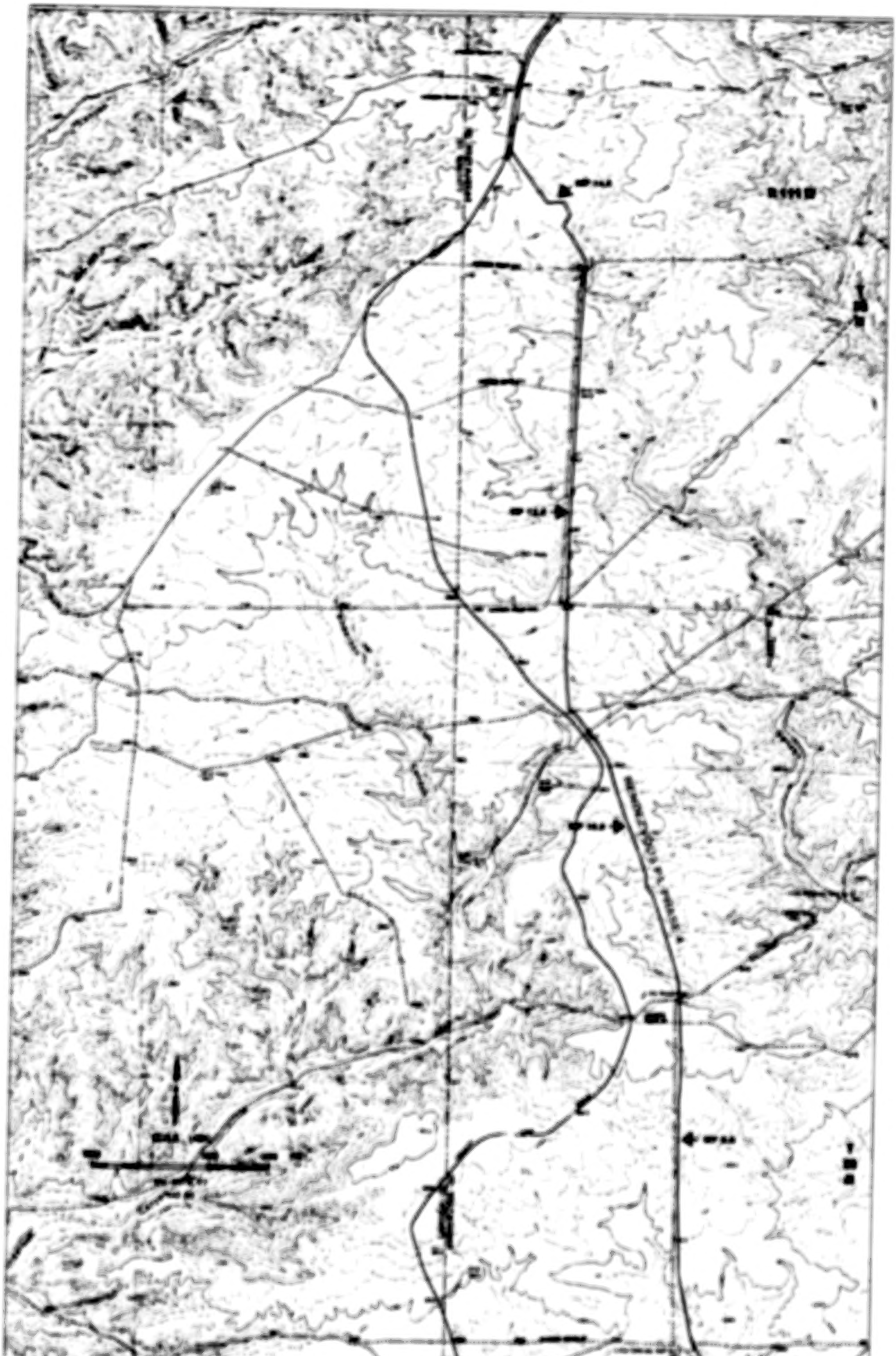

MTN. PLOVER HABITAT
PRAIRIE DOG COLONIES
PRAIRIE DOG COLONIES
MTN. PLOVER HABITAT
RAPTOR NEST
PRAIRIE DOG COLONIES
RAPTOR NEST(S)
RAPTOR NEST
RAPTOR NEST
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
ROOST
RAPTOR NEST
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
ACTIVE RAPTOR NEST
RAPTOR NEST
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
SHEET 3

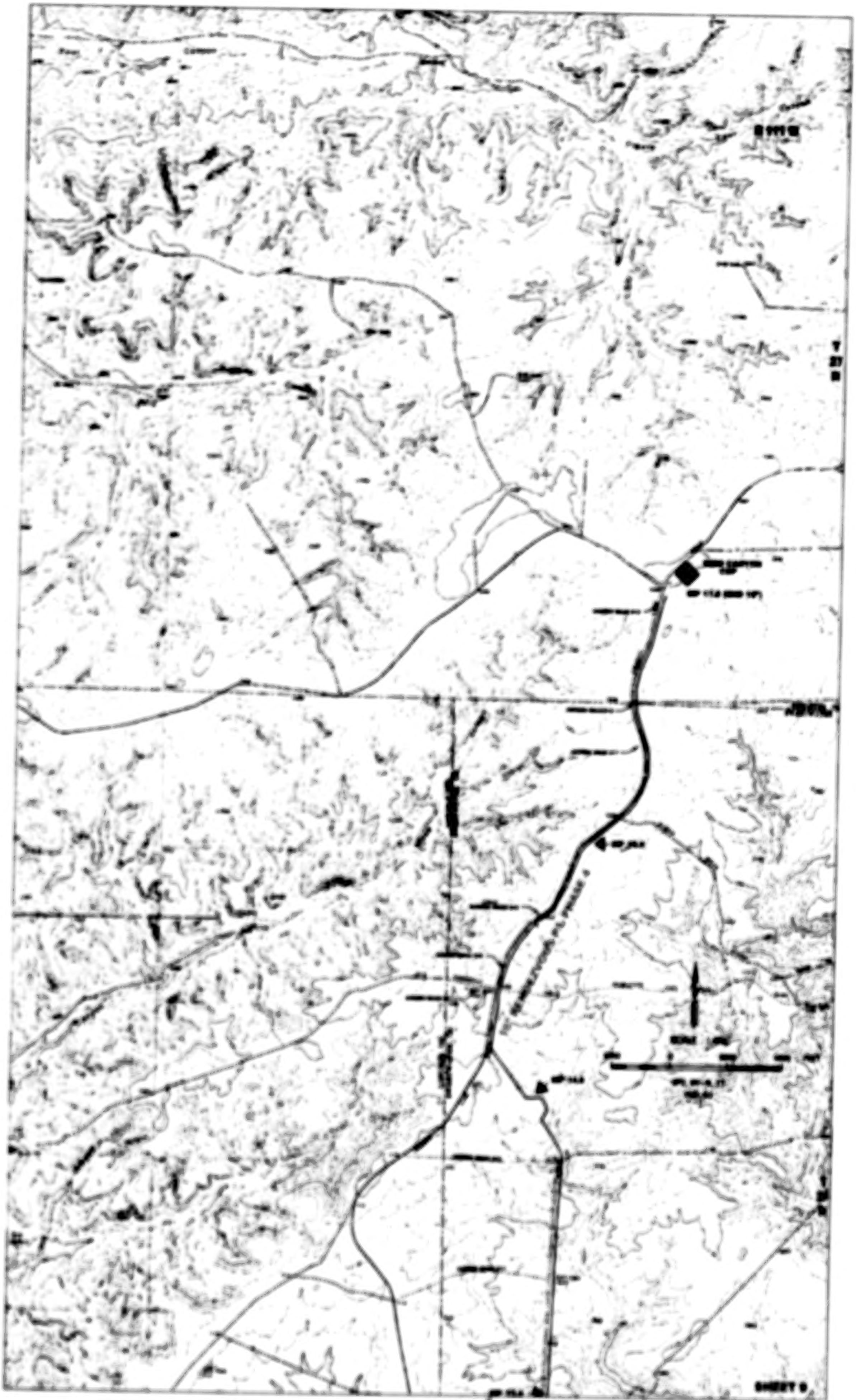

MTN. PLOVER HABITAT
RAPTOR NEST
RAPTOR NESTS
MTN. PLOVER HABITAT
RAPTOR NEST
MTN. PLOVER HABITAT
RAPTOR NEST
MTN. PLOVER HABITAT
MTN. PLOVER HABITAT
PRAIRIE DOG COLONIES
MTN. PLOVER HABITAT
RAPTOR NEST
PRAIRIE DOG COLONIES
SHEET 4


ELK SEVERE WINTER
YEARLONG RANGE
SHEET 6





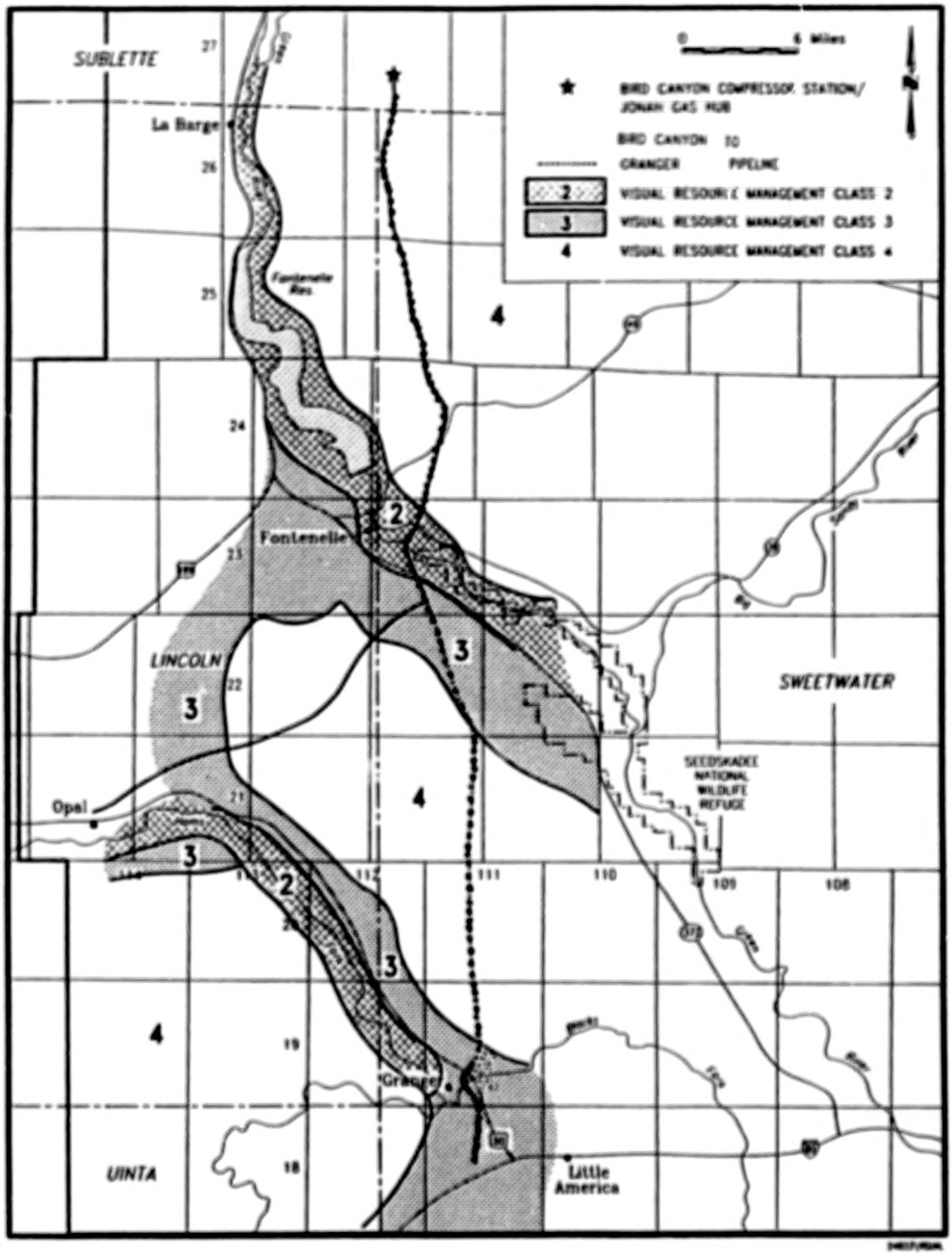

SHEET 8



T
27
N
SHEET 9

APPENDIX D

MAP OF VISUAL RESOURCE MANAGEMENT SENSITIVITY CLASSES


0 6 Miles
N
BIRD CANYON COMPRESSOR STATION/ JONAH GAS HUB
BIRD CANYON TO GRANGER PIPELINE
2 VISUAL RESOURCE MANAGEMENT CLASS 2
3 VISUAL RESOURCE MANAGEMENT CLASS 3
4 VISUAL RESOURCE MANAGEMENT CLASS 4
SUBLETTE
La Barge
Fontenelle Res.
Fontenelle
LINCOLN
SWEETWATER
SEEDSKADEE NATIONAL WILDLIFE REFUGE
Opal
Granger
Little America
UINTA
27
26
25
24
23
22
21
20
19
18
112
111
110
109
108
2
3
4

Visual Resource Management Sensitivity Classes Along Proposed Pipeline Routes.

Adapted from: Map 3.9, BLM, 1999

END

02-19-04